

حمل الآن

مجانا وحصريا

امتحانات رقم (1)

الترم الاول





Final Examinations

of Some Governorates

2025

1 Cairo Governorate

Ain-Shams Administration

Answer the following questions :

Question 1

A Choose the correct answer :

1. The zero group includes
(a) metals. (b) liquid nonmetals. (c) metalloids. (d) inert gases.
2. An element is located in period 3, group 3A and its nucleus contains 14 neutrons, so its mass number is
(a) 30 (b) 27 (c) 24 (d) 20

B What is meant by each of the following :

1. Elements.
2. A single covalent bond.
3. The electric field.
4. Unicellular organisms.

Question 2

A Put (✓) or (x) for each statement :

1. Electric field lines start from the positive charge, while magnetic field lines start from the (N) pole of the magnet. ()
2. The distinctive taste and various colours of Roquefort cheese are due to *Penicillium Notatum*. ()

B Answer the following :

1. **What is the atomic number of :** The trivalent nonmetal located in period 3
2. **State :** One contribution made by Moseley in improving science.
3. **Complete :** Tides are at their peak when Moon is in the phase of
4. A body weighs 600 N at the base of mountain Everest. **Calculate** its mass at its top.
Note : (Earth's gravitational field intensity is 10 N/kg).

Question 3

A Write the scientific term for each of the following statements :

1. A symbolic formula that expresses the type and number of atoms of the elements that form a molecule.
2. Different forms of same element's atoms, which have the same atomic number but different mass number.

B State one consequence of each of the following :

1. Passing a narrow beam of electrons between two charged plates, one positively charged and the other negatively charged.
2. Covering the tracheal tubes of an insect for several minutes.
3. Placing *Gazania* plant with flower in dark place.
4. The leaning of the northern end of Earth's axis to the Sun at an angle of 23.5°

Question 4

A Answer the following :

1. Arrange the following materials in order from top to bottom in the electrostatic series.
(Cotton – Glass – Ebonite – Silk – Wood)
2. If the Moon is entirely within the Earth's penumbra, it appears as
(a full Moon – a dark disc – a crescent – a red disc)

B Give reason :

1. Differences between stem cells and muscular cells.
2. Guard cells control the entry and exit of two gases.
3. The color of Uranus appears greenish blue.
4. The planets do not collide while orbiting the Sun.

2

Cairo Governorate

El Bassateen Educational Administration

Answer the following questions :

Question 1

A Complete the following sentences by using the suitable word(s) :

1. The mass number of the atom equals the summation numbers of and
2. The d-block elements are located in the of the periodic table and they are called elements.

B Compare between each of the following :

1. Ionic compounds **and** covalent compounds (Regarding electrical conductivity).
2. Sodium atom ($_{11}\text{Na}$) **and** chlorine atom ($_{17}\text{Cl}$) (Regarding the group number).
3. *Amoeba* **and** *Paramecium* (Regarding the type of movement).
4. Gravitational forces **and** collision forces (Regarding the type of forces).

Question 2

A Choose the correct answer for each of the following :

1. All the following are shapes of industrial magnets, **except**
(a) magnetic needle. (b) bar magnet.
(c) horse shoe magnet. (d) a piece of aluminum.

2. The solar system consists of planets.

(a) 6

(b) 8

(c) 4

(d) 9

B Give reason for each of the following :

1. The valency of inert gases is zero.
2. Stainless steel alloy is used in manufacturing cooking utensils.
3. Hearing crackling sound when taking off woolen clothes in winter.
4. Green algae are autotrophic organisms (producers).

Question 3

A Put (✓) or (X) :

1. The outermost energy level of magnesium ($_{12}\text{Mg}$) contains 2 electrons. ()
2. Methane (CH_4) is considered from inorganic compounds. ()

B Mention the importance of each of the following :

1. Yeast fungus.
2. Stomata in plant.
3. Electrostatic plating.
4. A coulomb meter device.

Question 4

A Mention the scientific term for each of the following :

1. The region of space surrounding an electric charge in which its effect appears.
2. A substance composed of two or more materials that are not chemically combined.

B What happens when :

1. The Earth's rotation around the Sun a full orbit every $365 \frac{1}{4}$ days.
2. The Moon is entirely located within the Earth's shadow.
3. The absence of nodular bacteria on the roots of bean plant.
4. Eating food and drinking water contaminated with *Salmonella Typhi* bacteria.

3

Giza Governorate

6th October Administration

Answer the following questions :

Question 1

A Choose the correct answer :

1. The zero group includes
(a) metals. (b) liquid nonmetals. (c) metalloids. (d) inert gases.
2. What is the subatomic component that has the smallest mass ?
(a) Proton. (b) Electron. (c) Nucleon. (d) Neutron.

B Give reasons for :

1. Stainless steel alloy is used to make cooking utensils.
2. Copper and gold are non-magnetic materials.
3. The ionic compound is electrically neutral.
4. Clover is an autotrophic organism.

Question 2

A Write the scientific term :

1. Chemical compounds that are used to improve agricultural production.
2. The dark area that does not receive light as a result of the presence of an opaque object in the path of light.

B Complete the following :

1. The element is essential for the greening of plants leaves, while element is essential for strengthening the plant roots.
2. The elements of group (1A) are called, while the elements of group (7A) are called
3. Mass is measured in, while weight is measured in
4. Insects respire gas from the atmospheric air through

Question 3

A Put (✓) or (X) for each statement :

1. Lemon and toothpaste can be distinguished by using litmus paper. ()
2. Argon and oxygen are both active gases. ()

B Give one example for each of the following :

1. Field forces.
2. Electrically non-conducting materials (Insulators).
3. A substance produced from photosynthesis.
4. Gaseous planets.

Question 4

A Correct the underlined word :

1. Tides occur periodically and regularly once every 24 hours.
2. The gravitational field intensity of the Moon at its surface is $\frac{1}{4}$ that of the Earth's gravitational field intensity at its surface.

B What happens if :

1. Stomata disappear from the plant leaves.
2. A person ingested food contaminated with *Salmonella Typhi* bacteria.
3. The Earth's rotation around its axis in a complete revolution.
4. The Earth being between the Moon and the Sun in the middle of the lunar month.

4

Giza Governorate

El-Omrana Administration

Answer the following questions :

Question 1

A Choose the correct answer :

1. The subatomic particles that has the smallest mass is
(a) electrons. (b) protons. (c) neutrons.
2. The bond in chlorine molecule (Cl_2) is
(a) ionic. (b) single covalent. (c) double covalent.

B Solve the following questions :

1. For an object whose mass on Earth equal 30 kg, **Calculate** :
 - a. The weight of this object on Earth.
 - b. Its weight on Moon surface.
(Earth's gravitational field intensity = 10 N/kg)
2. **Calculate** the atomic number of an alkali metal that is found in the 3rd period.
3. **How many** atoms are found in the magnesium carbonate molecules (MgCO_3).

Question 2

A Put (✓) or (x) for each statement :

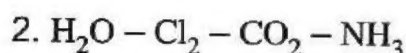
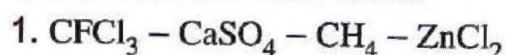
1. The density of iron filings is the greatest at the middle of the magnet. ()
2. The Earth is in the 3rd order according to ascending arrangement of planet size. ()

B Give reasons for :

1. The atom is electrically neutral.
2. Mosely arranged elements in his table according to their atomic number.
3. Hearing crackling sound when taking off woolen clothes in winter.
4. *Amoeba* is classified as a unicellular living organism.

Question 3

A Cross out the odd word:



B What happens :

1. Due to presence of gravitational attraction between the Earth and the Moon.
2. When chlorophyll is absent from the plant leaves.
3. When a person ingests food contaminated with *Salmonella Typhi* bacteria.
4. When the Earth aligns itself between the Sun and the Moon and blocks sunlight from reaching the Moon.

Question 4

A Write one function (importance) for each of the following :

1. Coulomb meter device.
2. Compass.

B Mention only one difference between each pair of the following :

1. Bacteria **and** *Paramecium*.
2. Arteries **and** veins.
3. Inner planets **and** outer planets.
4. Total lunar eclipse **and** partial lunar eclipse.

5 Alexandria Governorate

East Educational Administration

Answer the following questions :

Question 1

A Complete the following sentences :

1. An electrostatic charge can charge metal objects if the charged part is
2. Elements of the same period have chemical properties.

B Mention one function for the following :

1. Hoffman's voltameter.
2. Lightning rod.
3. Dialysis machine.
4. Phosphorus (P) for plants.

Question 2

A Put (✓) or (X) for each statement :

1. Protons are particles with a positive charge. ()
2. The elements of the group (3A) are called alkali metals. ()

B What is meant by the following :

1. Mass number.
2. Compounds.
3. Static electricity.
4. Microbes.

Question 3

A Cross the odd word in the following statements :

1. Krypton / Xenon / Nitrogen / Radon.
2. Oxygen molecule / Nitrogen molecule / Hydrogen chloride molecule / Sodium chloride molecule.

B Give a reason for the following statement :

1. Iron and steel are both magnetic materials.
2. *Amoeba* and *Paramecium* are classified as unicellular microscopic organisms.
3. Food is an important factor in the life of living organisms.
4. The Moon appears luminous in the sky although it is opaque.

Question 4

A Choose the correct answer :

1. The phenomenon of tides results from the gravitational force between
(a) Earth and Moon. (b) Earth and Sun.
(c) Sun and Moon. (d) Earth and water.
2. If one end of a rod is attracted to a bar magnet.
Which of the following describes the nature of the rod ?
(a) A rod of nickel only. (b) A rod of a nickel or magnet.
(c) A magnet only. (d) A rod of nickel or copper.

B Compare between each two in the following statement :

1. Dysentery and typhoid disease (In terms of : Symptoms).
2. Fish and insects (In terms of : The respiratory organ).
3. Gravitational force and collision force (In terms of : Type).
4. Homogeneous mixture and heterogeneous mixture (In terms of : Separation method).

6

Alexandria Governorate

El-Montazah Educational Administration

Answer the following questions :

Question 1

A Cross the odd word :

1. $_{11}\text{Na}$ – $_{19}\text{K}$ – $_{12}\text{Mg}$ – $_{3}\text{Li}$
2. Bacteria – Fungi – Human – Plants.

B (1) Mention how can the following living organisms respire :

- 1- Fish.
- 2- Amphibian.

(2) What happens if :

- 1- The Moon lies completely in the Earth's shadow (umbra).
- 2- The distance between the object and Earth's center increases (regarding to the gravity).

Question 2

A Correct the underline words :

1. Plant cell and bacterial cells both contain plasma membrane.
2. Magnetic forces are contact forces.

B (1) Give reasons for :

- 1- Water is classified as compound.
- 2- Aluminum-titanium alloy is used in construction of fighter jet frames.

(2) What is meant by :

- 1- Valence electrons.
- 2- Electric charge field.

Question 3

A Write the scientific term :

1. The phase of the Moon at the end of the lunar month.
2. Bonds are formed between nonmetal atoms.

B (1) Mention one use of :

- 1- Electroscope.
- 2- Phloem.

(2) $^{23}_{11}\text{Na}$, find :

- 1- The number of proton in its atom.
- 2- The electron configuration of this element.

Question 4

A Complete :

1. On rubbing the ebonite rod with a piece of silk charges are formed on ebonite rod.
2. The magnetic force at the two poles.

B (1) Mention one difference between :

- 1- Dysentery **and** typhoid disease.
- 2- Nobel gases **and** alkali metal (**According to** : Group number).

(2) Mention the name of the scientist :

- 1- Discovered that the nucleus contains positive protons.
- 2- Arranged the elements in ascending order according to their atomic weight.

7 Qalyoubia Governorate

Banha Educational Administration

Answer the following questions :

Question 1

A Choose the correct answer :

1. The atom contains negatively charged.
(electrons – neutrons – nucleus – levels)
2. block elements are located at the right side of the table. (p – s – d – f)

B What happens if :

1. Sand is added to water (**According to** : Type of mixture).
2. Bonding of a chlorine atom with a hydrogen atom (**According to** : Type of bond).
3. Approaching a positively charged glass rod close to a negatively charged electroscope.
4. Group of tissues are collected together.

Question 2

A Put (✓) or (X) for each statement :

1. Nickel is from non-magnetic substances. ()
2. The order of the Earth is the third, according to the size ascendingly. ()

B Give reasons for each of the following :

1. The mass of the atom is concentrated in its nucleus.
2. $_{12}\text{Mg}$ is from alkaline Earth metals.
3. Object's weight changes from one planet to another.
4. Rabbits are considered as a consumers.

Question 3

A Complete the following sentences :

1. Carbon is considered from atomic molecules.
2. Bond in oxygen molecule is

B Mention each of the following :

1. One importance of tides.
2. Respiratory organ in fish.
3. One use of yeast fungus.
4. The name of Moon phase after 14 days.

Question 4

A Correct the underlined words :

1. Different magnetic poles repel each other.
2. Collision is from examples of field forces.

B Answer the following questions :

1. **Determine** the location of $_{19}\text{K}$ in the periodic table.
2. **Write** the chemical symbol of the chlorine element.
3. **Write** the Lewis dot structure for $_{3}\text{Li}$
4. An object weight is 70 Newton, **Find** its mass on Moon's surface, Knowing that the gravitational field intensity (10 N/kg).

8 Sharkia Governorate

Science Inspection

Answer the following questions :

Question 1

A Complete the following sentences :

1. compounds their solutions do not conduct electricity.
2. Mendeleev arranged the elements according to

B (1) Compare between mercury and bromine "In terms of : Chemical symbol – Physical state - Type of element".

(2) Write the equation expressing the process of photosynthesis.

(3) Give an example for each of the following :

- 1- An alloy used in the manufacture of aircraft.
- 2- A rocky planet.

Question 2

A Put (✓) or (X) for each statement :

1. The phenomenon of tides occurs four times a day. ()
2. Vitamin (D) works to regulate the level of calcium and phosphorus in the blood. ()

B (1) Calculate the weight of an object with a mass of 20 kg at the Earth's surface. If you know that the Earth's gravitational field intensity is (10 N/kg).

(2) What are the results of :

- 1- The Earth is located between the Moon and the Sun in the middle of the Arabic month.
- 2- Not keeping yogurt in the refrigerator.

Question 3

A Choose the correct answer :

1. is among the materials that conduct electricity.
(Glass – Copper – Plastic – Wood)
2. Root nodule bacteria absorb element from the soil.
(carbon – hydrogen – nitrogen – oxygen)

B (1) The opposite figure represents the Lewis structure of the element atom (X), Determine :



- 1- The type of the element.
- 2- The valency of the element.

(2) Give reasons for the following :

- 1- Helium gas is used to fill balloons.
- 2- Beans are considered productive organisms.

Question 4

A Write the scientific term :

1. Microscopic organisms whose genetic material is surrounded by a nuclear membrane.
2. Different forms of atoms of the same element have the same atomic number and differ in mass number.

B (1) Mention one use for each of the following :

- 1- Electroscopes.
- 2- Kidney dialysis machine.
- 3- Stainless steel alloy.

(2) Mention one difference between : Oxygen molecule and ozone molecule.

9

Menofia Governorate

Shebeen El-kom Educational Zone

Answer the following questions :

Question 1

A Complete the following sentences :

1. The type mixture of sugary solution is considered from mixture.
2. Atomic number of the element whose third energy level (M) contains one electron is

B Answer the following :

1. **Write** the chemical symbol of sulphur.
2. **Give an example** of field forces.
3. **Give an example** of a fungus used in making Roquefort cheese.
4. **What** is the total number of groups in modern periodic table ?

Question 2

A Choose the correct answer :

1. The length of the shadow throughout the day is the minimum at
(morning – noon – evening – sunset)
2. In the opposite figure, the forces between magnet (1) and magnet (2) is
(attraction only – repulsion only – attraction and repulsion – elasticity forces)



B Give reasons for the following :

1. The bond in nitrogen molecule is triple covalent bond.
2. The compass box is made of a non-magnetic substance.
3. The importance of sweat glands as an excretory organ in human.
4. Nitrogen ${}^7_7\text{N}$ is located in the fifth group.

Question 3

A Write the scientific term that refers to the following :

1. Subatomic particles whose mass can be neglected but its charge cannot be neglected.
2. Elements located at the far right of the modern periodic table and do not participate in any chemical reaction.

B What happens when :

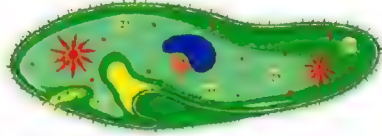
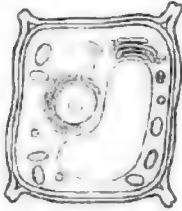
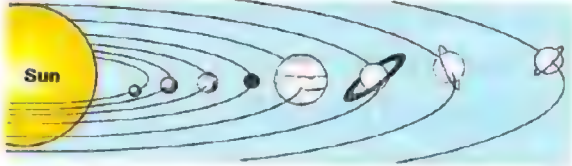
1. Transfer the body from the surface of Earth to planet Mars.
2. Human infection with the microbe *Entamoeba Histolytica*.
3. The absence of lungs in human body.
4. Part of the Moon falls in the Earth's shadow.

Question 4

A Correct the underlined words :

1. An object whose weight on the surface of the Earth is 20 newton has a mass of 200 kg on the surface of the Moon. (Note that $g = 10 \text{ N/kg}$)
2. Weak electric charges are measured by an ammeter.

B Study the following figures and then answer the following :

1. 	2. 
From above figure : What is the means of movement ?	When does the Moon become full ?
3. 	4. 
Does this cell exist in the body of rabbit? And why ?	In front of you the solar system. Name the gases that form the planet Jupiter.

10 Gharbia Governorate

Educational Directorate Subject

Answer the following questions :

Question 1

A Complete the following statements :

1. The number of atoms in a single molecule in some organic compounds may reach several thousand, as in and
2. Mixtures are classified into and

B (1) What happens when :

- 1- Approaching a negatively charged ebonite rod close to a negatively charged electroscope.
- 2- The Earth's revolution around the Sun is in a complete revolution.

(2) Compare between each of the following:

- 1- *Amoeba* and *Paramecium* "In terms of : Means of movement".
- 2- Dysentery and typhoid disease "In terms of : Location of the microbe".

Question 2

A Put (✓) or (X) next to each of the following statements that describe Earth's gravity:

1. It affects the masses of objects. ()
2. Its intensity decreases with increasing the distance from Earth's surface. ()

B (1) What is meant by :

1- Classification.

2- Tissue.

(2) Mention :

1- The phases of the Moon in the first half of the Arabic month.

2- Types of lunar eclipses.

Question 3

A Choose the correct answer from the following :

1. What is the number that is the same in all the atoms of the same element ?

(a) Mass number.

(b) Number of electrons.

(c) Number of neutrons.

(d) Number of nucleons.

2. Which of the following choices represents the two metals lithium and potassium ?

Choices	Metal with higher melting point	More reactive metal with water
(a)	Lithium	Lithium
(b)	Lithium	Potassium
(c)	Potassium	Lithium
(d)	Potassium	Potassium

B (1) Design a table showing the number of elements and the number of atoms composing one molecule of magnesium carbonate MgCO_3

(2) The following table shows the electron configuration of the atoms of 4 elements :

(A)	(B)	(C)	(D)
2, 2	2, 8, 8	2, 8, 1	2, 8, 7

Which element its molecule is diatomic ?

(3) A copper rod is rubbed with a piece of silk, then the rod is brought close to paper scraps. **What happens** to the paper scraps ? **Explain.**

(4) **What are the properties** that characterize stem cells in human ?

Question 4

A Write the scientific term :

1. The planet that has a thin crust full of craters.

2. A natural stone that has the ability to attract objects made of iron.

B Give reason for each of the following :

1. Ionic compounds are neutral in charge.

2. Scientists have made several attempts to classify elements.

3. Compass box is made of copper or plastic and not of iron.

4. Green algae are considered as producer organisms.

Answer the following questions :

Question 1

A Choose the correct answer :

- Which two elements are located in the same group in the modern periodic table ?
 (a) $^{39}_{19}\text{K}$ and $^{12}_6\text{C}$ (b) $^{30}_{15}\text{P}$ and $^{23}_{11}\text{Na}$ (c) $^{14}_7\text{N}$ and $^{28}_{14}\text{Si}$ (d) $^{39}_{19}\text{K}$ and ^7_3Li
- Element (X) has a nucleus that contains 33 neutral particles and 60 nucleons, so its symbol is
 (a) $^{60}_{27}\text{X}$ (b) $^{60}_{33}\text{X}$ (c) $^{27}_{60}\text{X}$ (d) $^{33}_{27}\text{X}$

B (1) What is the period number in which the d-block starts ?
 What is the name given to most of its elements ?

(2) State with explanation :

What do the figures (1) and (2) represent ?

(3) Give reason : In some countries, a metal rod whose lower end is fixed in a metal plate that buried in the ground, while the upper end is pointed and fixed near high building.

(4) Mention two examples of protozoa.

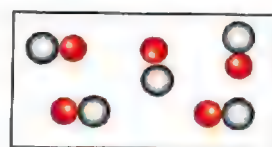


Fig. (1)

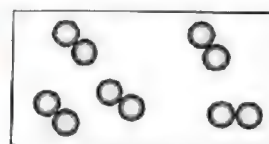


Fig. (2)

Question 2

A Write the scientific term of the following :

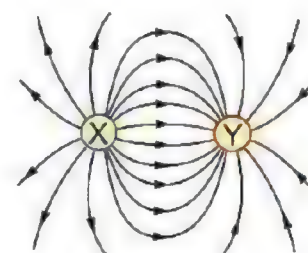
- The force that causes a ball to fall from a high position to Earth's surface.
- Month in which the day length can reach 13 hours and 40 minutes.

B (1) Give one function of :

- Nitrogen.
- Aluminum - titanium alloy.

(2) In the opposite figure :

What is the type of charges (X) and (Y) ?



(3) Write the equation that represents the cellular respiration process in eukaryotic cells.

Question 3

A Three elements, (A) is alkali metal, (B) is from group (6A) and D is halogen : **Complete :**

1. Molecular formula of (A) with (B) is, and the type of bond is
2. Molecular formula of (B) with (D) is, and the type of bond is

B (1) **What is meant by** the electric field ?

(2) **Compare between** xylem and phloem tissue "**According to : Their function**".

(3) **In the opposite figure :**

- 1- What is the name of the region where the Moon is located ?
- 2- What is the phenomenon is represented by the figure ?



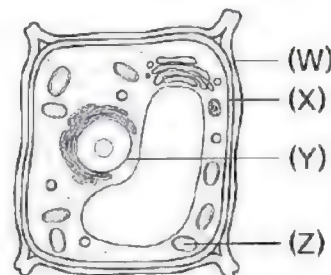
Question 4

A **Cross the odd word and write the scientific term of the rest :**

1. Copper / Silver / Cobalt / Aluminum.
2. Gravitational force / Collision force / Magnetic force / Electrostatic force.

B (1) **From the opposite figure, Label :**

- (W) :
- (X) :
- (Y) :
- (Z) :



(2) **Compare between Mercury and Earth planets in terms of :**

- 1- Atmospheric composition.
- 2- Volcanic activity.

Answer the following questions :

Question 1

A **Put (✓) or (X) for each statement :**

1. The mass of subatomic particles is measured in atomic masses unit (gm). ()
2. It's difficult to know metalloids from their number of outermost electron. ()

B Mention the importance or one use for each of the following :

1. Stainless steel alloy.
2. Hoffmann voltameter.
3. Tidal phenomenon.
4. Penicillin.

Question 2

A Choose the correct answer :

1. The weight of object on the Moon's surface equal 30 N, then it's weight on the Earth's surface equals N
 (a) 200 (b) 180 (c) 18 (d) 6
2. The ancient people use to determine the time based on the length and direction of the shadow.
 (a) sand glass (b) telescope (c) sundial (d) compass

B Compare each of the following according to the following :

(1)	P.O.C	Homogeneous mixture	Heterogeneous mixture
	Method of separation	1-	2-

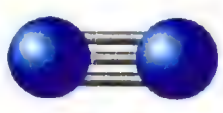
(2)	P.O.C	Electron	Neutron
	Charge	1-	2-

(3)	P.O.C	Magnetic materials	Non-magnetic materials
	Definition	1-	2-

(4)	P.O.C	Mammals	Fish
	Respiratory organ	1-	2-

Question 3

A Look at the following figures then fill in the space :

1. 	2. 
The figure represents molecule. (carbon dioxide – water – methane)	The figure represents bond. (ionic – double covalent – triple covalent)

B What is the result of each of the following :

1. Rubbing a glass rod with a piece of silk.
2. The whole Moon being entirely within Earth's shadow.
3. Ingesting food contaminated with *Salmonella Typhi*.
4. Stomata disappears from plant leaves.

Question 4

A Choose the odd word out :

1. Lodestone / Magnetic needle / Horse shoe magnet / Bar magnet.
2. Collision force / Elasticity force / Friction force / Gravitational force.

B Give reason for each of the following :

1. The Moon appears illuminated despite being dark.
2. The colour of Uranus's atmosphere appears greenish blue.
3. The green plant needs nitrogen element in the growth of cells and tissue.
4. Stem cells have great importance in treatment of some diseases.

13 El-Suez Governorate

North administration Directorate Subject

Answer the following questions :

Question 1

A Choose the correct answer :

1. The atom consists of negatively charged
(a) electrons. (b) neutrons. (c) nucleus. (d) levels.
2. Tritium is considered from the isotopes of element.
(a) oxygen (b) hydrogen (c) nitrogen (d) carbon

B Complete the following sentences :

1. The Lewis model of the fluorine atom ${}_9\text{F}$ includes single electron.
2. The is used for detecting if an object is electrically charged.
3. Amphibians obtain O_2 gas from the atmospheric air through lungs and
4. A mixture whose components can be distinguished by the naked eye is known as mixture.

Question 2

A Give an example for :

1. Non-magnetic material.
2. Gaseous planet.

B Write the scientific term :

1. The sum of number of the protons and the neutrons found inside the nucleus of the atom.
2. A physical property used to distinguish between materials that float on the surface of water and those that sink in it.

3. A fungus is used to kill bacteria that cause some diseases such as diphtheria and tonsillitis.
4. Regions in space formed due to the collapse of a massive star at the end of its life.

Question 3

A Put (✓) or (X) for each statement :

1. An element its outermost energy level (L) contains two electrons, so its atomic number is 4 ()
2. The bonding in NaCl molecule is ionic bonding. ()

B Correct the underlined words :

1. Xylem tissue transports the food produced by photosynthesis from the leaves to the rest of the plant.
2. The circulatory system is an open path for food in the body.
3. An object whose mass is 30 kg, it weights 100 N at Earth's surface.
4. The Moon lies between the Earth and the Sun during the full Moon phase.

Question 4

A Choose the odd word out :

1. Collision forces / Friction forces / Elasticity forces / Magnetic forces.
2. Wood / Iron / Paper / Wool.

B Give reason :

1. Mushroom fungus is classified as an eukaryote.
2. The Moon appears illuminated in the sky, despite being dark.
3. The bean plant is considered a producer.
4. The succession of day and night on Earth's surface.

14 Port Said Governorate

North Directorate Subject

Answer the following questions :

Question 1

A Choose the correct answer :

1. The element whose molecule consists of two atoms is
(mercury oxide – bromine – iron – ozone)
2. The valency of magnesium is (1 – 3 – 2 – 0)

B Answer the following questions :

1. **Write** the symbol of silver.
2. **Determine** the location of $_{16}\text{S}$ element in the periodic table.
3. **Calculate** the weight of object its mass is 4 kg, if you know that gravitational field intensity of Earth = 10 N/kg
4. **Mention** two examples of eukaryotes.

Question 2

A Put (✓) or (x), with correction :

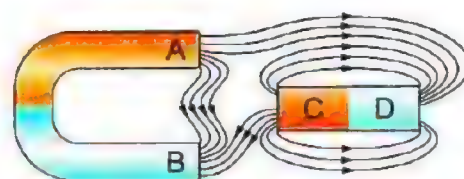
1. The weight of object on Moon is 24 N, so its mass on Earth is 4 kg ()
2. The closet planet from the Sun is Mars. ()

B (1) Give reason :

- 1- The bond in nitrogen molecule N_2 is triple covalent bond.
- 2- Roquefort cheese has a green color and a distinctive taste.

(2) Answer the following :

- 1- **Determine** the number of each atoms and the number of elements in calcium sulphate CaSO_4
- 2- The opposite figure represents two magnets, **Find** the two different poles.



Question 3

A Write the scientific term for each the following sentences :

1. The block to which group alkali metal belongs.
2. Compound in which carbon atoms are binded mainly to hydrogen and may also be binded to other atoms like oxygen and nitrogen.

B Compare between each of the following :

1. Conducting **and** non-conducting substances.
2. Prokaryotes **and** eukaryotes.
3. Amphibians **and** mammals "In terms of : Their respiratory organ".
4. Mercury **and** Earth "In term of : Atmospheric composition".

Question 4

A Complete the following sentences :

1. In a lightning rod system its lower end is fixed in the and the upper end
2. Magnetic field lines start from the pole and end at the pole.

B (1) When does each of the following occur :

1- Summer solstice.

2- Partial lunar eclipse.

(2) Answer the following :

1- **Mention the type of movement** in each of the following living organisms based on what you studied.

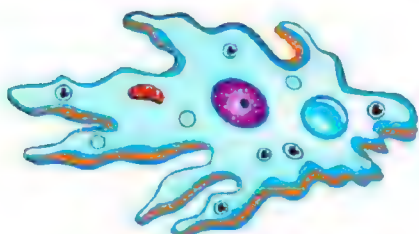


Figure (1)

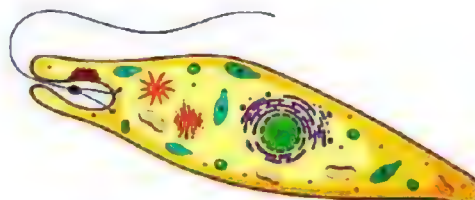


Figure (2)

2- **Deduce** the way which nitrate salts be removed from the soil of plants.

15 Behaira Governorate

Elay El-Barood Directorate Subject

Answer the following questions :

Question 1

A Choose the correct answer :

1. An element whose outer energy level is L contains 3 electrons and its atomic number is

(a) 5

(b) 15

(c) 3

(d) 13

2. The atmosphere of Uranus is similar to that of

(a) Jupiter.

(b) Venus.

(c) Neptune.

(d) Earth.

B Write the scientific term :

1. The sum of number of protons and neutrons inside the nucleus.

2. Compounds that are mostly soluble in water and have high melting and boiling points.

3. An inert gas with a density less than that of air and used to fill balloons.

4. A biological process in which food materials are broken down in the presence of oxygen to produce energy.

Question 2

A Put (✓) or (X) :

1. The covalent bond form compound molecules only. ()

2. The gravitational force increases as the masses of the two objects increases. ()

B Give reasons for the following :

1. The energy level K is filled with electrons before the level L.
2. Aluminum-titanium alloy is used in the manufacture of aircraft structures.
3. A metal chain touching the ground dangles from fuel transport vehicles.
4. The lion is considered a heterotrophic organism.

Question 3

A Complete the following sentences with suitable words :

1. An element with atomic number 11 is located in the period and group
2. The is a device used to determine the type of charge formed on objects, while is used to measure the weight.

B Give an example of each of the following :

1. A phenomenon that occurs when part of the Moon falls in the shadow of Earth and the other part in the penumbra.
2. A microbe that causes typhoid.
3. A substance extracted from the *Penicillium Notatum* fungus.
4. The respiratory organ of amphibians to breath in water.

Question 4

A Choose the odd word out and then write the relation between the rest :

1. Root nodule bacteria / Yogurt bacteria / *Paramecium* / Bread mold fungus.
2. Starting from the north pole / Invisible / Ends at the south pole / Intersected.

B Compare between :

1. Homogeneous mixture and heterogeneous mixture "In terms of : Example".
2. Mass and weight "In terms of : Definition".

16 Kafr El-Sheikh Governorate

East Directorate Subject

Answer the following questions :

Question 1

A Choose the correct answer :

1. The Moon is seen as a full Moon when it has completed of its orbit around the Earth.
(a) $\frac{1}{8}$ (b) $\frac{1}{2}$ (c) $\frac{1}{4}$ (d) $\frac{3}{4}$
2. is unicellular eukaryotic living organism that moves by cilia.
(a) Bacteria (b) *Euglena* (c) *Amoeba* (d) *Paramecium*

B Answer the following questions :

1. Find the mass number of an alkali metal, if its ion configuration is similar to that of $_{18}\text{Ar}$ and its nucleus contains 20 neutrons.
2. Calculate the weight of an object on Jupiter's surface, if the mass of this object on Jupiter is 20 kg. Knowing that Jupiter's gravitational field intensity is 2.5 times of that on Earth and Earth's gravitational field intensity is 10 N/kg
3. Represent the bonding between $_{12}\text{Mg}$ and $_8\text{O}$ by the Lewis dot structure.
4. Identify the location of the element $_{10}\text{Ne}$ in the periodic table.

Question 2

A Put (✓) or (x) :

1. A molecule of phosphoric acid (H_3PO_4) consists of 7 atoms of 3 different elements. ()
2. The box of a compass can be made of copper or nickel. ()

B Compare between :

(1)

P.O.C	Dysentery	Typhoid
1- Pathogen		
2- Treatment		

(2)

P.O.C	Photosynthesis process	Cellular respiration process
1- It occurs in		
2- Produced substances		

Question 3

A Correct the underlined words :

1. Mercury oxide is an element.
2. Nucleus is absent in both plant cell and bacterial cell.

B Write the scientific term :

1. Regions in space formed due to the collapse of a massive star at the end of its life.
2. A scientist who discovered that the nucleus of an atom contains positively charged protons.
3. The inert gas that exists in the atmosphere of outer planets.
4. The phenomenon that occurs when the entire Moon is located within the shadow of the Earth.

Question 4

A Cross out the odd word :

1. Wood – Ebonite – Carbon – Silk. 2. NaBr – CH₄ – H₂O – HCl

B Give a reason for :

1. Protium, deuterium and tritium are isotopes of the same element.
2. Neutrons are not deflected when they pass through an electric field.
3. The alternation of the four seasons.
4. The density of iron filings increases at the poles of the magnet.

17 Fayoum Governorate

East Directorate Subject

Answer the following questions :

Question 1

A Complete the following sentences :

1. Element that is necessary for strengthening roots of plants is
2. An atom changes into ion when it gains one or more electron.

B What is meant by :

1. Compound. 2. Matter. 3. Contact forces. 4. Prokaryotes.

Question 2

A Choose the correct answer :

1. Earth's lines of gravitational forces are represented by lines.
(a) magnetic field (b) electric field
(c) gravitational field (d) the length
2. When the illuminated side of the Moon is facing the Sun and the dark side is facing the Earth, it is phase.
(a) crescent. (b) full Moon. (c) new Moon. (d) gibbous.

B Mention one difference between :

1. A mixture of sand in water **and** a mixture of sugar in water.
"In terms of : Separation methods".
2. Water **and** honey "In terms of : Viscosity".
3. Animal cell **and** plant cell "In terms of : Centrosome".
4. Copper **and** iron "In terms of : Their attraction to the magnet".

Question 3

A Correct the underlined words :

1. From organic compounds is NaHCO₃
2. The chemical symbol of calcium is C

B What will happen when :

1. Hang a rod of ebonite after rubbing it with silk and bring a rod of glass close to it after rubbing it with silk.
2. The plant does not obtain carbon, hydrogen and oxygen elements.
3. Add prepared yogurt to milk immediately after boiling.
4. The Earth's axis tilts toward the Sun one time and away from the Sun another time.

Question 4

A Write the scientific term :

1. The Moon's movement around the Earth.
2. The area surrounding electric charges where their effect is appeared without contact.

B Give reasons for :

1. *Paramecium* and *Euglena* are considered as unicellular organisms.
2. Green algae are considered as producer organisms.
3. The surface of Mercury is full of craters.
4. The Moon appears bright even though it is an opaque object.

18 Menia Governorate

Deirmawas Directorate Subject

Answer the following questions :

Question 1

A Complete the following sentences :

1. The elements in the modern periodic table were arranged according to and
2. The chemical symbol for is Cl, while the chemical symbol for sodium is

B Give reason :

1. Helium is used in filling balloons.
2. Animals are considered consumers.

3. The bond in nitrogen molecule is triple covalent bond.
4. Feeling a slight electric shock when touching a metal door handle after walking barefoot on the carpet.

Question 2

A Correct the underlined words :

1. In the spring season, the number of day light hours is greater than the number of night time hours.
2. When two different magnetic poles are approached to each other, they repel each other.

B What are the consequences of :

1. Atom of an element gains an electron or more.
2. Increasing the mass of two objects (regarding the attraction between them).
3. Excessive use of fertilizers.
4. Eating food contaminated with *Salmonella Typhi*.

Question 3

A Write the scientific term :

1. A table in which elements are arranged in ascending order based on their atomic numbers.
2. A mixture whose components cannot be distinguished by the naked eye.

B Mention one importance or use of each of the following :

- | | |
|--|---------------------------|
| 1. Phloem tissue in plants. | 2. The compass. |
| 3. <i>Penicillium Roqueforti</i> fungus. | 4. Stainless steel alloy. |

Question 4

A Choose the correct answer :

1. When rubbing an ebonite rod with a piece of wool, both of them acquire charges. (positive / negative / identical / opposite)
2. An object its weight on the Earth = 180 newton, so its weight on the Moon = newton. (18 / 30 / 6 / 200)

B Compare between each of the following :

1. Unicellular **and** multicellular organisms (**one point only**).
2. Mars and Jupiter "**In terms of** : Their crust".
3. Total lunar eclipse **and** partial lunar eclipse "**In terms of** : The Moon's position".
4. *Paramecium* **and** *Euglena* "**In terms of** : Means of movement".

Answer the following questions :

Question 1

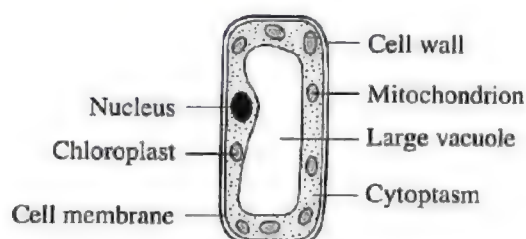
A Choose the correct answer :

- The atom ($^{24}_{12}\text{Mg}$) has a number of protons its number of neutrons.
 (a) more than (b) less than (c) equal to (d) double
- rod gains electrons when rubbed with a piece of cotton.
 (a) Silk (b) Glass (c) Ebonite (d) Wood

B The opposite figure represents the structure of a plant cell.

Write what each of the following refers to:

- A structure that is unique to the plant cell.
- A structure that is shared with bacterial cell.
- A structure that is shared with both animal and bacterial cells.
- A structure whose size differs compared to that of the animal cell.



Question 2

A Put (✓) or (X) :

- After 17 days of the Moon's orbit around the Earth, it becomes in the waning gibbous phase. ()
- The root nodules of leguminous plants contain beneficial protozoa. ()

B Give a reason :

- Succession of day and night on Earth's surface.
- Bean plant is an autotrophic organism.
- Steel is a magnetic material.
- The valency of noble gases is zero.

Question 3

A Write the scientific term :

- Organisms that can make their own food through photosynthesis.
- It is bacteria that converts lactose in milk into lactic acid found in yogurt.

B What happens when :

- The Earth being between the Moon and the Sun in the middle of the lunar month.
- Mitochondria are absent from eukaryotic cells.
- Increasing the distance between centers of two material objects.
- A metallic atom loses one or more electrons.

Question 4

A Cross out the odd word and write the scientific term of others :

1. Protium / Thorium / Deuterium / Tritium.
2. Bacteria / *Euglena* / *Paramecium* / *Amoeba*.

B What is the importance of :

1. Phloem.
2. Spring scale.
3. Electroscope (**only one**).
4. Arteries.

20 Luxor Governorate

Esna Directorate Subject

Answer the following questions :

Question 1

A Complete the following statements :

1. The transition metals start to appear in the period number
2. A mixture whose components can be distinguished by naked eye is known

B Give one example for each of the following :

1. A covalent molecule that includes single covalent bond.
2. Chemical separation methods.
3. Magnetic materials.
4. An inorganic substance used in photosynthesis.

Question 2

A Put (✓) or (X) :

1. An object weight on the Moon is less than its weight on the Earth. ()
2. An observer on the Earth see several sides of the Moon. ()

B (1) What happen when :

- 1- Chloroplasts absent from plant cell.
- 2- Rubbing two different insulated uncharged objects together.

(2) Mention one importance of each the following :

- 1- Arteries.
- 2- Electroscope.

Question 3

A Write the scientific term :

1. Elements whose electron configuration end with 5 or 6 or 7 electrons.
2. Nonmetal gas isn't affected by temperature, and is used to fill car tires.

B (1) Give reason for :

- 1- Cork floats on surface of water while iron sinks in it.
- 2- The formation of black holes in the space.

(2) Compare between :

- 1- Mammals **and** amphibians (**According to** : Respiratory organ).
- 2- Electron **and** proton (**According to** : Electric charge – Position in the atom).

Question 4

A Choose the correct answer :

1. The south pole of compass needle points towards
(geographical east pole of the Earth – geographical west pole of the Earth –
geographical south pole of the Earth – geographical north pole of the Earth)
2. When object mass on the Earth surface is 30 kg, then
its mass in outer space is (0 kg – 10 kg – 30 kg – 0.3 kg)

B What is meant by :

1. The group of inner planets.
2. Penumbra.
3. Root nodule bacteria.
4. Xylem.

21 Aswan Governorate

Aswan Directorate Subject

Answer the following questions :

Question 1

A Complete the following sentences :

1. The atom is charged in its normal state, while the nucleus is charged.
2. When an aluminum atom ($_{13}\text{Al}$) converts into ion, the number of electrons in its ion is

B (1) What are the results based on :

Bringing a negatively charged object close to the disc of a negatively charged electroscope.

(2) Give reasons for each of the following :

- 1- The atoms of the isotopes of the same element have the same atomic number but differ in mass number.
- 2- Sand in water is a heterogeneous mixture.

(3) From the living organism shown in the opposite figure :

1- What is the name of this organism ?

2- What is the means of movement in this organism ?



Question 2

A Write the scientific term of each of the following statements :

1. A system used to protect structures and buildings from lightning strikes.
2. A planet with a very thin crust filled with craters.

B (1) An element has its electrons distributed in three energy levels, and the number of electrons in its outermost energy level equals the number of electrons in its first energy level, the number of protons equals the number of neutrons.

Determine.

- 1- Its atomic number.
- 2- Its mass number.

(2) **Mention one importance of each of the following :**

- 1- The gravitational attraction between the Moon and the Earth.
- 2- Tracheal tubes.

Question 3

A Choose the correct answer :

1. The atomic number of an element equals the mass number when the atom does not contain
(a) protons. (b) neutrons. (c) electrons. (d) nucleon.
2. Which of the following cannot be separated by physical or chemical methods ?
(a) Calcium. (b) Water.
(c) Table salt in water. (d) Mercury oxide.

B (1) **What are the consequences of each of the following :**

The high percentage of oxygen gas found in Earth's atmosphere.

(2) **Give one example for each of the following :**

- 1- A beneficial prokaryotic microbe.
- 2- A disease caused by *Entamoeba Histolytica*.

- (3) Calculate the Earth's gravitational pull on an object with a mass of 60 kg
(Knowing that Earth's gravitational field intensity is 10 N/kg)

Question 4

A Put (✓) or (X) for each statement, with correction :

1. The Earth's gravitational force causes all objects to fall away from the direction of the Earth's center. ()
2. Magnetic forces increase closer to the poles of the magnet. ()

B (1) Mention one difference between each of the following :

- 1- A cell of a green plant leaf **and** a cell of human skin.
- 2- The respiratory organ in each of mammals **and** fish.

(2) In the two following figures :

- 1- What is the name of the Moon phase in each of these shown cases ?



(a)



(b)

- 2- What is the time period between the two phases ?

1 Cairo Governorate Ain Shams

1

(A) (1) d

(2) b

(B) (1) It is simplest pure form of matter that can't be dissociated into simpler forms by physical or chemical methods.

(2) It is type of covalent bond between two non-metal atoms, each one shares with one unpaired valence electron.

(3) The region of space surrounding an electric charge where its effect appears.

(4) Microscopic organisms whose bodies consist of one (single) unspecialized cell.

2

(A) (1) ✓

(2) ✗

(B) (1) 15

(2) – He discovered periodicity of elements properties is related to atomic number not atomic masses (weight).

– He added noble gases and other elements after Mendeleev's table.

(3) New Moon or Full Moon.

(4) Weight of body on Earth (w)

= Mass of body (m) × Earth gravitational field intensity (g)

Mass of body = $\frac{\text{weight of body}}{\text{Earth gravitational field intensity}}$

Mass of body = $\frac{600}{10} = 60 \text{ kg}$

3

(A) (1) Molecular formula.

(2) Isotopes.

(B) (1) The electron's beam gets closer towards positive charged plate only.

(2) Insect can't respire and it will die.

(3) *Gazania* flowers will close in dark place (at night).

(4) Summer begins.

4

(A) (1) Glass - Wood - Silk - Cotton - Ebonite

(2) A red disc.

(B) (1) Because stem cells are undifferentiated cells, while muscular cells are differentiated cells that perform specialized function.

(2) Because guard cells control entry of oxygen gas during respiration and exit of carbon dioxide gas and excess water during excretion.

(3) Because its atmosphere contains methane gas.

(4) Because they revolve around the Sun in elliptical orbits at different distances from the Sun.

2

Cairo Governorate El Bassateen

1

(A) (1) Protons and neutrons.

(2) Middle - Transition.

(B) (1)

Ionic compounds	Covalent compounds
Their aqueous solutions and molten conduct electricity	They don't conduct electricity

(2)

$_{11}\text{Na}$	$_{17}\text{Cl}$
Group (1A)	Group (7A)

(3)

<i>Amoeba</i>	<i>Paramecium</i>
By pseudopodia (False Feet)	By cilia

(4)

Gravitational force	Collision force
Field force	Contact force

2

(A) (1) d (2) b

(B) (1) Because the outermost energy level for noble gases is completely filled with electron and Lewis dot structure doesn't contain unpaired electrons.

(2) Because it is resistant to rusting.

(3) Because during friction between the body and the woolen clothing, there is a discharge of the electric charges that have accumulated on the body.

(4) Because they can produce their own food through photosynthesis process.

3

(A) (1) ✓ (2) x

(B) (1) It is used in making bread and production of ethyl alcohol.

(2) They are responsible for gas exchange and excretion in plants.

(3) It is used in metal coating (plating).

(4) It is used to measure weak electrical charges.

4

(A) (1) The electric field.
(2) Mixture.

(B) (1) The succession (alternation) of four seasons occurs.

(2) Total lunar eclipse will occur and Moon appears as a dark disc.

(3) Plant can't get nitrogenous compounds to build protein for growth.

(4) The person will be infected with typhoid fever disease.

3 Giza Governorate 6th October

1

(A) (1) d (2) b

(B) (1) Because it is resistant to rusting.

(2) Because they aren't attracted to the magnet.

(3) Because the number of positive charges equals the number of negative charges.

(4) Because clover can make its own food through photosynthesis process.

2

(A) (1) Fertilizers.

(2) Shadow.

(B) (1) Nitrogen / Phosphorus.

(2) Alkali metals / Halogens.

(3) Kilogram / Newton.

(4) Oxygen / Tracheae (tracheal tubes).

3

(A) (1) ✓ (2) x

(B) (1) Magnetic forces.

(2) Wood.

(3) Glucose sugar.

(4) Jupiter.

4

(A) (1) 12

(2) $\frac{1}{6}$

- (B) (1) Plant can't perform photosynthesis and respiration, also plant can't excrete excess water and CO_2
 (2) The person will be infected with typhoid fever disease.
 (3) It causes a cycle of day and night and the apparent motion of Sun.
 (4) The Moon appears fully bright and it is known as full Moon phase.

4

Giza Governorate Omrania

1

(A) (1) a

(2) b

- (B) (1) a. Weight of object on Earth (w)
 $= \text{Mass of object (m)} \times \text{Earth's gravitational field intensity (g)}$
 $= 30 \times 10 = 300 \text{ N}$
 b- Weight of object on Moon
 $= \frac{1}{6} \times \text{Weight of object on Earth}$
 $= \frac{1}{6} \times 300 = 50 \text{ N}$
 (2) $\therefore$ Element is in alkali metal group.
 $\therefore$ It is located in group (1A).
 $\therefore$ Element is in 3rd period.
 $\therefore$ It has three energy levels.
 $\therefore$ Atomic number = 11
 (3) No. of atoms of $\text{MgCO}_3 = 5$

2

(A) (1) x

(2) x

- (B) (1) Because the number of positive charges equals the number of negative charges.

- (2) Because he discovered that periodicity of elements properties is related to atomic number not atomic masses (weight).
 (3) Because during friction between the body and the woolen clothing, there is a discharge of the electric charges that have accumulated on the body.
 (4) Because *Amoeba* has one (single) unspecialized cell.

3

(A) (1) CH_4

(2) Cl_2

- (B) (1) Occurrence of tidal phenomenon and revolution of Moon around the Earth.
 (2) The plant will not be able to make photosynthesis process and produce food, which will lead to death.
 (3) The person will be infected with typhoid fever disease.
 (4) Lunar eclipse will occur.

4

- (A) (1) It measures weak electrical charges.
 (2) It is used to determine Earth's four main geographical directions.
 (B) (1) • **Bacteria:** Prokaryotes.
 • **Paramecium:** Eukaryotes.
 (2) • **Arteries:** They carry blood rich in digested food and oxygen gas away from heart to all body parts.
 • **Veins:** They carry blood with waste products and CO_2 from all body parts to heart.
 (3) • **Inner planets:** Rocky planets.
 • **Outer planets:** Gaseous planets.

(4) • **Total lunar eclipse:**

The whole (entire) Moon is located completely within shadow of Earth.

- **Partial lunar eclipse:** A part of Moon is located in the shadow of the Earth, while the other part is in penumbra of the Earth.

5

**Alexandria Governorate East
Educational Administration**

1

- (A) (1) Insulated. (2) Different.
- (B) (1) It is used for electrolysis of acidified water into its elements (Oxygen and hydrogen).
- (2) It protects structures and buildings from lightning strikes.
- (3) It purifies blood from toxins when kidneys stop working.
- (4) It is essential for making plant roots stronger (strengthening plant roots).

2

- (A) (1) ✓ (2) ✗
- (B) (1) The sum of number of protons and neutrons in the nucleus of element atom.
- (2) It is pure substance formed by chemical combination between two or more elements in fixed mass ratio.
- (3) The charges that accumulate on the surfaces of objects when they gain or lose electrons.
- (4) They are microscopic living organisms which can't be seen by naked eye and are found everywhere and inside our bodies, they can be beneficial or harmful.

3

- (A) (1) Nitrogen.
- (2) Sodium chloride molecule
- (B) (1) Because they are attracted to the magnet.
- (2) Because they can't be seen by naked eye and their bodies consist of single (one) unspecialized cell.
- (3) Because it is the main source of energy and produces substances used to build our bodies.
- (4) Because it reflects sunlight.

4

- (A) (1) (a) (2) (b)

(B) (1)

Dysentery disease	Typhoid disease
1- Stomach pain. 2- Weight loss. 3- Loss of appetite. 4- Fatigue.	1- High fever. 2- Headache. 3- Stomach and muscle pain. 4- Feeling tired.

(2)

Fish	Insects
Gills	Tracheal tubes (tracheae)

(3)

Gravitational force	Collision force
Field force	Contact force

(4)

Homogeneous mixture	Heterogeneous mixture
Evaporation and condensation	Filtration

6 Alexandria Governorate El Montazah

1

(A) (1) ${}_{12}\text{Mg}$ (2) Bacteria.

(B) (1) 1- Gills.

2- Lungs and skin.

(2) 1- Total lunar eclipse will occur and the Moon appears as dark disc.

2- The gravitational force between the object and Earth's center decreases.

2

(A) (1) Cell wall. (2) Field.

(B) (1) 1- Because its components can be separated into oxygen and hydrogen gases by electrolysis.

2- Because it is lighter than aluminum alone and retains its strength at high temperature.

(2) 1- They are electrons found in the outermost energy level of element atom.

2- The region of space surrounding an electric charge where its effect appears.

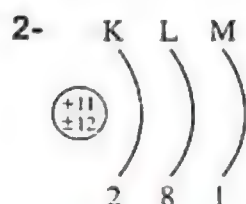
3

(A) (1) New moon. (2) Covalent bond.

(B) (1) 1- It is used to detect electric state of object and determine the type of charge on object.

2- It transports food from leaves to the rest of the plant.

(2) 1- 11



4

(A) (1) Negative. (2) Is strongest.

(B) (1) 1- • **Dysentery:** It is caused by *Entamoeba Histolytica*.

• **Typhoid disease:** It is caused by *Salmonella Typhi* bacteria.

2- • **Noble gases:** Group (0).

• **Alkali metal:** Group (1A).

(2) 1- Rutherford.

2- Mendeleev.

7 Qalyoubia Governorate Banha

1

(A) (1) Electrons. (2) p

(B) (1) A heterogeneous mixture is formed.

(2) The chlorine atom shares its single valence electron with the valence electron of the hydrogen atom forming one single covalent bond between them.

(3) The divergence of gold leaves of the electroscope decreases.

(4) It forms an organ.

2

(A) (1) X (2) X

(B) (1) Because the mass of electrons is negligible (very tiny) compared to mass of protons and neutrons.

(2) Because its last (outermost) energy level contains two electrons.

(3) Because the gravitational field intensity changes from one planet to another.

(4) Because rabbits can't make their own food and depend directly or indirectly on producers.

3

(A) (1) Mono

(2) Double covalent bond.

(B) (1) It is used to generate electricity and cleans water bodies from impurities.

(2) Gills.

(3) It is used in making bread and production of ethyl alcohol.

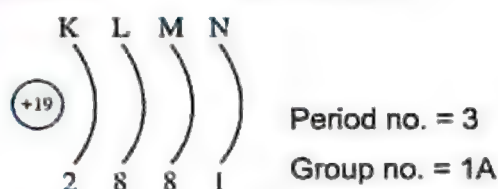
(4) Full Moon.

4

(A) (1) Attract.

(2) Contact.

(B) (1)



(2) Cl

(3) Li

(4) Weight of object on Earth (w)

= Mass (m) × Gravitational field intensity (g)

$$\text{Mass (m)} = \frac{\text{Weight (w)}}{\text{Gravitational field intensity (g)}}$$

$$= \frac{70}{10} = 7 \text{ kg}$$

∴ Mass of object doesn't change with changing position.

∴ Object mass on Earth = Object mass on Moon = 7 kg

8

**Sharkia Governorate
Science Inspectorate**

1

(A) (1) Covalent.

(2) Atomic masses (weight).

(B) (1)

Point of comparison	Mercury	Bromine
Chemical symbol	Hg	Br
Physical state	Liquid	Liquid
Type of element	Metal	Non-metal

(2) Water + Carbon dioxide + Light energy

→ Glucose + Oxygen gas

(3) 1- Aluminum-Titanium alloy.

2- Earth.

2

(A) (1) X

(2) ✓

(B) (1) Weight of object on Earth (w)

= Mass (m) × Earth's gravitational field intensity

= 20 × 10 = 200 N

(2) 1- The Moon is completely bright

and this phase is called

full Moon.

2- The activity of lactic acid bacteria

will continue producing more

lactic acid, which increases

yogurt acidity and spoils its taste.

3

(A) (1) Copper.

(2) Nitrogen.

(B) (1) 1- Metal.

2- Trivalent.

(2) 1- Because its density is less than

that of air and it is non-flammable.

2- Because bean can make its own

food through photosynthesis

process.

4

(A) (1) Eukaryotes (*Euglena*, Yeast fungus).

(2) Isotopes.

(B) (1) 1- It is used to detect electric state

of object and determine the type of charge on object.

2- It purifies blood from toxins when

kidneys stop working.

3- It is used to make cooking

utensils.

- (2) • **Oxygen molecule** : Contains two oxygen atoms (Diatomic) O_2
 • **Ozone molecule** : Contains three oxygen atoms (Polyatomic) O_3

9 Menofia Governorate Shebin El-Khayma

1

- (A) (1) Homogeneous mixture.
 (2) 11
 (B) (1) S
 (2) Magnetic force.
 (3) *Penicillium Roqueforti* fungus.
 (4) 18 vertical groups.

2

- (A) (1) Noon. (2) Repulsion only.
 (B) (1) Because each nitrogen atom shares three unpaired valence electrons to form three electrons pairs and forming triple covalent bond.
 (2) To prevent attraction between magnetic needle and box which affects on its movement.
 (3) Because they excrete excess water and salts in form of sweat.
 (4) Because the last (outermost) energy level contains five electrons.

3

- (A) (1) Electron.
 (2) Noble (inert) gases.
 (B) (1) The weight of the body on Mars changes than that on the surface of Earth, due to changing of gravitational field intensity from one planet to another.

- (2) Human will be infected with dysentery (amoebic dysentery) disease.
 (3) Human can't obtain oxygen from atmospheric air and will die.
 (4) A partial lunar eclipse will occur and Moon appears partially dark.

4

- (A) (1) 2 (2) Coulomb meter.
 (B) (1) Cilia
 (2) In the middle of lunar month (after 14 days).
 (3) No, it doesn't exist in body of rabbit because this cell contains cell wall and chloroplasts which don't exist in animal cell.
 (4) Hydrogen and helium gases.

10 Gharbia Governorate Educational Zone

1

- (A) (1) Plastic polymers/ Vitamin D
 (2) Homogeneous / Heterogeneous mixture.
 (B) (1) 1- The divergence of gold leaves of the electroscope will increase.
 2- The succession (alternation) of four seasons occurs.
 (2) 1-

<i>Amoeba</i>	<i>Paramecium</i>
By pseudopodia	By cilia

2-

Dysentery disease	Typhoid disease
In human's large intestine	In human's digestive canal (tract)

2

(A) (1) X (2) ✓

(B) (1) 1- It is grouping of living organisms into groups based on their similarities and differences to facilitate their study.

2- It composed of a group of cells.

(2) 1- - First (waxing) crescent.

- First quarter.

- First (waxing) Gibbous.

- Full moon.

2- - Total lunar eclipse.

- Partial lunar eclipse.

3

(A) (1) (b) (2) (b)

(B) (1)

Molecule	No. of elements	No. of atoms
$MgCO_3$	Three (magnesium, carbon and oxygen)	Five

(2) (D)

(3) Paper scraps aren't attracted to copper rod because copper rod must be insulated with wooden handle to prevent leakage of electric charges.

(4) Stem cells in human are characterized by:

1- Their ability to renew themselves through division and produce more stem cells.

2- Their ability to differentiate into specialized types of cells.

4

(A) (1) Mercury. (2) Lodestone.

(B) (1) Because the number of positive charges equals the number of negative charges.

(2) To facilitate their study and conclude relationships between elements and their physical and chemical properties.

(3) To prevent attraction between magnetic needle and box which affects on its movement.

(4) Because green algae can make its own food through photosynthesis process.

11

Dakahlia Governorate
Educational Directorate

1

(A) (1) (d) (2) (a)

(B) (1) 4 / Transition metals.

(2) • Fig. (1) represents molecule of compound.

• Fig. (2) represents molecule of element.

(3) To allow accumulated electrical charges from clouds to pass through it to the ground without causing any damage to buildings.

(4) *Amoeba / Paramecium*.

2

(A) (1) Gravitational force.

(2) June.

(B) (1) 1- • It is essential for greening of plant leaves.

• It is used to fill car tires.

2- It is used in the construction of military air craft frames.

(2) • X is a positive charge.

• Y is a negative charge.

(3) Glucose + Oxygen → Water +
Carbon dioxide + Energy.

3

(A) (1) A_2B / Ionic bond.

(2) BD_2 / Covalent bond.

(B) (1) The region of space surrounding
an electric charge where its effect
appears.

(2)

Xylem tissue	Phloem tissue
It transports water and mineral salts from roots to the rest of the plant.	It transports food from leaves to the rest of the plant.

(3) 1- Earth's shadow (Umbra).

2- Total lunar eclipse.

4

(A) (1)

	The odd word	The scientific term of others
1-	Copper	Magnetic materials.
2-	Collision force	Field forces.

(B) (1) W : Cell wall.

X : Cell membrane.

Y : Nucleus.

Z : Chloroplast.

(2)

Point of comparison	Mercury	Earth
1- Atmospheric composition	It is very thin, contains hydrogen and helium gases.	It contains mainly nitrogen and oxygen gases.
2- Volcanic activity	No active volcanoes	Many active volcanoes

12

Ismailia Governorate
Science Inspectorate

1

(A) (1) x

(2) ✓

(B) (1) It is used to make cooking utensils.

(2) It is used in electrolysis of acidified
water into its elements (oxygen and
hydrogen).

(3) It is used to generate electricity
and cleanse water bodies from
impurities.

(4) It is used to resist bacteria that
cause some diseases,
as diphtheria and tonsillitis.

2

(A) (1) (b)

(2) (c)

(B) (1) 1- Evaporation and condensation.

2- Filtration.

(2) 1- Negative charge.

2- Neutral.

(3) 1- They are materials that attracted
to magnets.

2- They are materials that aren't
attracted to magnets.

(4) 1- Lungs. 2- Gills.

3

(A) (1) Water.

(2) Triple covalent.

(B) (1) A glass rod becomes positively
charged and a piece of silk
becomes negatively charged,
because electrons transfer from
a glass rod to a piece of silk.

(2) A total lunar eclipse will occur and
Moon appears as dark disc.

(3) The person will be infected with
typhoid fever disease.

- (4) Plant can't perform photosynthesis and respiration, also plant can't excrete excess water and CO_2

4

- (A) (1) Lodestone.
(2) Gravitational force.
- (B) (1) Because it reflects sunlight.
(2) Because its atmosphere contains methane gas (CH_4).
(3) Because nitrogen element is essential for greening of plant leaves and formation of proteins.
(4) Because it is possible to observe the differentiation of stem cells as they transform into healthy cells or diseased cells, so producing healthy cells that replace the diseased cells.

13

North Suez Directorate of Education Inspection of Science

1

- (A) (1) (a) (2) (b)
(B) (1) One. (2) Electroscope.
(3) Skin. (4) Heterogeneous.

2

- (A) (1) Copper. (2) Jupiter.
(B) (1) Mass number (number of nucleons).
(2) Density.
(3) *Penicillium Notatum*.
(4) Black holes.

3

- (A) (1) ✓ (2) ✓
(B) (1) Phloem (2) Digestive.
(3) 300 (4) New moon.

4

- (A) (1) Magnetic forces.
(2) Iron.

- (B) (1) Because its genetic material is surrounded by nuclear membrane that separating it from the cytoplasm.
(2) Because it reflects sunlight.
(3) Because bean can make its own food through photosynthesis process.
(4) Due to Earth's rotation around its axis in front of Sun.

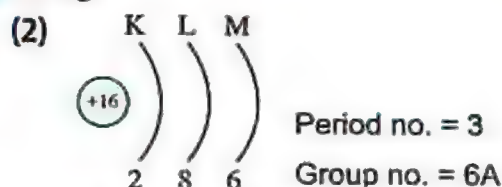
14

Port Said Governorate Science Supervision

1

- (A) (1) Bromine (2) 2

- (B) (1) Ag



- (3) Weight of object on Earth (w)
= Mass of object (m) $\times$ Earth's gravitational field intensity (g)
= $4 \times 10 = 40 \text{ N}$

- (4) • Yeast fungus.
• Plants and animals.

2

- (A) (1) ... 6.6 N ... (2) ... mercury.
(B) (1) Because each nitrogen atom shares three unpaired valence electrons to form three electron pairs and forming triple covalent bond.
(2) Due to presence of *Penicillium Roqueforti* fungus, which gives roquefort cheese its distinctive sour taste and multiple colors.

(3)

Molecule	No. of elements	No. of atoms
CaSO_4	Three (calcium, sulphur and oxygen)	Six

- (4) (C and B) (Or) (A and D).

3

- (A) (1) s-block.
(2) Organic compounds.

(B) (1)

Electric conducting materials	Non-electric conducting materials (Insulators)
- Materials that allow electric charges to flow through them. - Materials on which static electric charges can settle, but the charged part must be insulated.	- Materials that do not allow electric charges to flow through them. - Materials on which electric charges settle.
Examples: - Carbon. - Metals such as iron, copper, and aluminum.	Examples: - Wood. - Wool. - Glass. - Silk.

(2)

P.O.C	Prokaryotes	Eukaryotes
Body structure	All of them are unicellular	May be unicellular or multicellular
Body complexity	Simple structure	More complex
Size	Relatively small in size	Relatively large in size
Genetic material	In the cytoplasm, not surrounded by a nuclear membrane	Surrounded by a nuclear membrane that separating it from the cytoplasm
Cell organelles	Many organelles are absent	Contain many organelles
Examples	Bacteria	- Fungi such as yeast fungus, bread mold fungus and mushroom fungus. - Protozoa such as <i>Amoeba</i> and <i>Paramecium</i>. <i>Euglena</i>. - Plants. - Animals.

(3)

Amphibians	Mammals
They obtain oxygen by lungs and skin	They obtain oxygen by lungs

(4)

Mercury	Earth
It is very thin, contains hydrogen and helium gases	It contains mainly nitrogen and oxygen gases

4

- (A) (1) Plate buried in ground / Pointed, allowing accumulated electric charges on clouds to pass through the ground.
(2) North - South.
- (B) (1) When the northern end of Earth's axis is tilted towards the Sun at angle 23.5° , this occurs on June 21st
(2) When a part of Moon is located in shadow of Earth (umbra) and other part is in penumbra of Earth.
(3) • Fig (1) : By pseudopodia (false feet).
• Fig (2) : By flagellum.
(4) By planting many leguminous plants which contain root nodule bacteria that live inside nodules on root, provide plant with nitrogen but in form of nitrogenous compounds such as nitrate salts to build proteins for plant growth.

15

Behaira Governorate
Science Inspectorate

1

- (A) (1) (a) (2) (c)
(B) (1) Mass number (number of nucleons).
(2) Ionic compounds.
(3) Helium gas.
(4) Cellular respiration.

2

(A) (1) x

(2) ✓

(B) (1) Because the energy of K level is less than that of L level.

(2) Because it is lighter than aluminum alone and retains its strength at high temperature.

(3) To discharge electric charges generated by friction of fuel with surface of fuel tank, to prevent fuel combustion.

(4) Because lion can't make its own food and depends directly or indirectly on producers.

3

(A) (1) Three / 1A.

(2) Electroscope (Electric detector) / Spring balance (Newton meter).

(B) (1) Partial lunar eclipse.

(2) *Salmonella Typhi* bacteria.

(3) Penicillin. (4) Skin.

4

(A)

	The odd word	The relation between the rest
(1)	Bread mold fungus	Unicellular organisms
(2)	Intersected	Properties of magnetic field lines

(B) (1)

Homogeneous mixture	Heterogeneous mixture
Examples : - Table salt in water. - Sugar in water. - Vinegar in water.	Examples: - Sand in water. - Mud in water.

(2)

Mass	Weight
The amount of matter in an object.	The gravitational force that Earth exerts on the object.

16

Kafr El-Sheikh Governorate
Science Inspectorate

1

(A) (1) b

(2) d

(B) (1) ∴ Alkali metals in group (1A) and its ion electronic configuration is similar to $_{18}\text{Ar}$, so it is in 4th period.

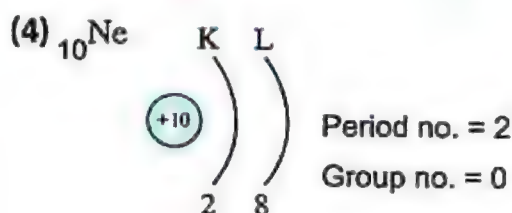
∴ Atomic number (Number of protons) = 19

∴ Mass number = Number of protons + Number of neutrons
= 19 + 20 = 39

(2) ∴ Jupiter's gravitational field intensity is 2.5 times of that on Earth.

∴ Jupiter's gravitational field intensity = $2.5 \times 10 = 25 \text{ N}$

Weight of object on Jupiter's surface (w)
= Mass of object (m) × Jupiter's gravitational field intensity (g)
= $20 \times 25 = 500 \text{ N}$



2

(A) (1) X

(2) X

(B) (1) 1- *Entamoeba Histolytica* /

Salmonella Typhi bacteria.

2- Antiprotozoal drugs / Antibiotics.

(2) 1- Chloroplasts / Mitochondria.

2- Glucose sugar and oxygen gas / Water, carbon dioxide gas and energy.

3

(A) (1) Compound.

(2) Centrosome (central body).

(B) (1) Black holes. (2) Rutherford.

(3) Helium gas.

(4) Total lunar eclipse.

4

(A) (1) Carbon.

(2) CH_4

(B) (1) Because they have the same atomic number but differ in mass number.

(2) Because neutrons are neutrally charged.

(3) Due to Earth's orbit (revolution) around the Sun once every $365 \frac{1}{4}$ days (one year).

(4) Because the magnetic forces are at their maximum at the poles of the magnet.

17

Fayoum Governorate Science Supervision

1

(A) (1) Phosphorus. (2) Negative.

(B) (1) It is pure substance formed by chemical combination of two or more elements in fixed mass ratio.

(2) Anything that has mass and volume (occupies space).

(3) Forces that act on objects when they touch each other and they have no field, such as : collision forces and friction forces.

(4) They are unicellular living organisms, their genetic material is in cytoplasm of cell and isn't surrounded by a nuclear membrane.

2

(A) (1) C

(2) C

(B) (1) • A mixture of sand in water :

By filtration

• A mixture of sugar in water :

By evaporation and condensation.

(2) • Water : Low viscosity

• Honey : High viscosity.

(3) • Animal cell : It contains centrosome.

• Plant cell : It doesn't contain centrosome.

(4) • Copper : It doesn't attract to the magnet.

• Iron : It attracts to the magnet.

3

(A) (1) CH_4

(2) Ca

(B) (1) A rod of ebonite gains negative charges and a rod of glass gains positive charges after rubbing them with silk so they are attracted to each other, due to different electric charges.

(2) The plant will not be able to make carbohydrates through photosynthesis process.

(3) Lactic acid bacteria will be killed due to high temperature, so it can't convert lactose in milk into lactic acid.

(4) This results in the difference of the angle at which sunlight falls on different areas of Earth surface and thus a difference in intensity on unit areas, leading to alternation of four seasons.

4

- (A) (1) Orbital motion.
(2) The electric field.
- (B) (1) Because they are microscopic organisms whose bodies consist of one (single) unspecialized cell.
(2) Because green algae can make their own food through photosynthesis process.
(3) Because it is caused by meteorites impacts.
(4) Because it reflects Sunlight.

18 Menia Governorate Deirmawas

1

- (A) (1) Their atomic numbers / The method of filling the energy sublevels with electrons.
(2) Chlorine / Na
- (B) (1) Because its density is less than that of air and it is non-flammable.
(2) Because animals can't make their own food and depend directly or indirectly on producers.
(3) Because each nitrogen atom shares with three unpaired valence electrons to form three electron pairs and forming triple covalent bond.
(4) Because when you touch the handle, the charge that formed on the body due to friction with the carpet is discharged.

2

- (A) (1) Summer. (2) Attract.
- (B) (1) It changes into negative ion carrying a number of negative charges equal to the number of gained electrons.

- (2) The attraction between two objects increases by increasing masses of two objects.
(3) It harms plants, soil, human, health, animals, and the environment.
(4) The person will be infected with typhoid fever disease.

3

- (A) (1) Moseley's periodic table.
(2) Homogeneous mixture.
- (B) (1) It transports food from leaves to the rest of the plant.
(2) It is used to determine Earth's four main geographical directions.
(3) It is used in making roquefort cheese with distinctive taste and various colours.
(4) It is used to make cooking utensils.

4

- (A) (1) Opposite. (2) 30
- (B) (1)

Point of comparison	Unicellular organisms	Multicellular organisms
Body structure	Their bodies consist of a single unspecialized cell	Their bodies consist of many specialized cells
Examples	- Yeast fungus. - <i>Euglena</i> . - Bacteria. - Protozoa, as : <i>Amoeba</i> and <i>Paramecium</i> .	- Plants. - Animals. - Bread mold fungus. - Mushroom fungus.

(2)

Mars	Jupiter
It has a thick crust.	It has no crust and composed of gases only.

(3)

Total lunar eclipse	Partial lunar eclipse
The whole Moon is completely located in shadow of Earth and it appears as dark disc.	A part of Moon is located in the shadow of Earth, while the other part is in penumbra of Earth and it appears partially dark

(4)

Paramecium	Euglena
It moves by cilia.	It moves by flagellum.

19 Qena Directorate of education Science Inspectorate

1

- (A) (1) (C) (2) (C)
(B) (1) Chloroplast. (2) Cell wall.
(3) Cell membrane. (4) Large vacuole.

2

- (A) (1) ✓ (2) ✗
(B) (1) Due to the Earth's rotation around its axis in front of Sun.
(2) Because bean plant can make its own food through photosynthesis process.
(3) Because steel is attracted to the magnet.
(4) Because the outermost energy level for noble gases is completely filled with electrons and Lewis dot structure doesn't contain any unpaired electrons.

3

- (A) (1) Autotrophic organisms (Producers).
(2) Lactic acid bacteria.

- (B) (1) The Moon is completely bright and this phase is called full Moon.
(2) The cells will not be able to release the energy needed to carry out all vital activities.
(3) The gravitational force between them decreases.
(4) It changes into positive ion carrying a number of positive charges equal to the number of lost electrons.

4

(A)

	The odd word	The scientific term of others
(1)	Thorium	Isotopes of hydrogen
(2)	Bacteria	Eukaryotes

- (B) (1) It transports food from leaves to the rest of the plant.
(2) It is used to measure the weight of objects.
(3) It is used to detect the electric state of object and determine the type of charge on object.
(4) They carry blood with oxygen and food away from heart to all body cells.

20 Luxor Education governorate Esna educational administration

1

- (A) (1) 4 (2) Heterogeneous mixture.
(B) (1) Hydrogen molecule or hydrogen chloride molecule.

- (2) Electrolysis / Heating.
 (3) Iron / Cobalt / Nickel / Wrought iron.
 (4) Water / Carbon dioxide gas.

2

- (A) (1) ✓ (2) ✗
 (B) (1) 1- The plant will not be able to carry out photosynthesis and can't produce food, leading to death.
 2- Only the rubbed part is charged with static electricity.
 (2) 1- They carry blood with oxygen and food away from heart to all body cells.
 2- It is used to detect electric state of object and determine the type of charge on object.

3

- (A) (1) Non-metals. (2) Nitrogen gas.
 (B) (1) 1- Because the density of cork is less than that of water, while density of iron is more than that of water.
 2- Due to the collapse of massive star at the end of its life.

(2) 1-

Mammals	Amphibians
They obtain oxygen by lungs.	They obtain oxygen by lungs and skin.

2-

Point of comparison	Electron	Proton
Electric charge	It is negatively charged particle	It is positively charged particle
Position in the atom	Revolves around nucleus	Found inside the nucleus.

4

- (A) (1) Geographical south pole of the Earth.
 (2) 30 kg
 (B) (1) 1- They are the closest four planets to the Sun, and they are rocky planets.
 2- It is the partially illuminated area that receives some of the light ray which surrounds the shadow created by the presence of an opaque object in the path of light rays.
 3- Beneficial bacteria found inside nodules on the roots of leguminous plants, supplying them with nitrogen in the form of nitrogenous compounds to produce the proteins for growth.
 4- It transports water and mineral salts from roots to the rest of the plant.

21

**Aswan Governorate
 Aswan Educational Directorate**

1

- (A) (1) Neutrally / Positively.
 (2) Positive / 10
 (B) (1) The divergence of gold leaves of electroscope will increase, due to different charges.
 (2) 1- They have the same atomic number, because they contain the same number of protons in their nuclei, but they differ in mass number due to the different number of neutrons in their nuclei.

2- Because the components of the sand in water mixture can be distinguished by naked eye.

(3) 1- *Euglena*. 2- Flagellum.

2

(A) (1) Lightning rod. (2) Mercury.

(B) (1) 1- $\therefore$ Electrons distributed in three energy levels.

$\therefore$ The number of electrons in its outermost energy level equals to number of electrons in its first level.

$\therefore$ The electronic distribution (configuration) :



and atomic number = 12

2- $\therefore$ The number of protons equals the number of neutrons.

$\therefore$ Number of protons = Atomic no.

$\therefore$ Number of neutrons = Atomic number = 12

$\therefore$ Mass number = Number of protons + Number of neutrons
= 12 + 12 = 24

(2) 1- The occurrence of tidal phenomenon.

2- It is the respiratory organ in insects.

3

(A) (1) (b)

(2) (a)

(B) (1) Life presents on its surface and it is known as planet of human life.

(2) 1- Root nodule bacteria.

2- Dysentery (amoebic dysentery).

(3) Earth's gravitational pull =

Weight of object on Earth.

Weight of object on Earth (w)

= Mass of object (m) $\times$ Earth's

gravitational field intensity (g)

= $60 \times 10 = 600 \text{ N}$

4

(A) (1) ... fall down towards the direction ...

(2) $\checkmark$

(B) (1) 1- • A cell of a green plant leaf :

It contains chloroplasts.

• A cell of human skin :

It contains centrosome (central body).

2- • The respiratory organ in mammals : Lungs.

• The respiratory organ in fish : Gills.

(2) 1- (a) Full moon.

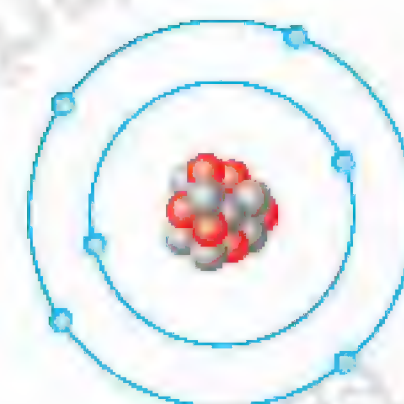
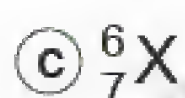
(b) New moon.

2- Half lunar month (14 days).

1 (A) Choose the correct answer :

(1) The opposite figure illustrates the structure of atom (X).

What is the symbol which represents this atom ?



(2) When a wooden ruler is rubbed with a piece of cotton, an electric charge is generated between them.

What is the type of the charge which is formed on the ruler ?

And what is the type of the mutual electric force between them?

(a) Positive / Repulsion.

(b) Negative / Repulsion.

(c) Positive / Attraction.

(d) Negative / Attraction.

(B) Answer the following questions :

(1) **What is the atomic number** of the element which is located in period 2, group 6 A ?

.....

(2) **Give an example** for a protozoan living organism, **and classify** its nucleus.

.....

(3) **Compare between :**

1- Mercury **and** Earth "In terms of : The composition of atmosphere".

.....

.....

2- The microbe found in the root nodules of the bean plant **and** the microbe causing dough fermentation "In terms of : Genetic material".

.....

2 (A) Complete the following statements :

(1) device is used to analyze of the water into its which are oxygen and hydrogen.

(2) The magnetic field lines start from the pole of the magnet and end at the pole.

(B) (1) Identify :

1- The positions of the moon, Earth and sun during the new moon phase.

.....

2- Two symptoms of typhoid fever.

.....

(2) **What happens when :**

1- A metallic element atom loses one electron or more.

2- The distance between the centres of two objects increases.

3 (A) **Write the scientific term of each of the following statements :**

(1) A subatomic particle whose mass can be neglected, but its charge cannot be neglected.

(2) The region of space surrounding the electric charge in which its effect appears.

(B) (1) **Mention one use for each of the following :**

1- The compass.

2- Aluminum-Titanium alloy.

(2) **Identify one similarity and one difference between each of the following :**

1- Bacteria and *Amoeba*.

2- Total eclipse and partial eclipse.

4 (A) **Mark (✓) or (X) for each of the following statements :**

(1) The p-block in the periodic table consists of 5 vertical groups. ()

(2) The weight of an object on the surface of the moon is greater than its weight on the surface of the Earth. ()

(B) **Answer the following questions :**

(1) **What is the type of the bonding between** atom $\cdot X \cdot$ and atom $\cdot \ddot{Y} \cdot$?

(2) **Mention the method of** respiration in adult frogs.

(3) **What is the principle of** the sundial?

(4) **What is the name of** the sugar found in milk ? **What is the name of** the substance to which it is converted during making yogurt?

1 (A) Complete the following statements :

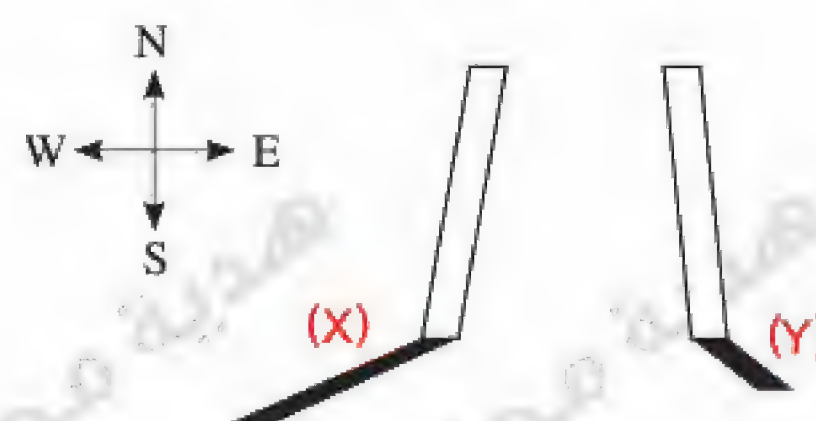
- (1) Among the isotopes of hydrogen are the isotope ${}^2_1\text{H}$ and the isotope ${}^3_1\text{H}$
- (2) Collision forces, forces and elasticity forces are considered forces.

(B) State one importance for each of the following :

- (1) Tides. (2) Nitrogen gas.
- (3) Stem cells. (4) *Penicillium Roqueforti* fungus.

2 (A) Choose the correct answer :

- (1) The opposite figure illustrates the length and direction of the shadow of a pole fixed in the ground at two different times of the day. If the shadow (X) is formed at 10 am, then the shadow (Y) is formed at



- (a) 9 am (b) 11 am
- (c) 2 pm (d) 6 pm
- (2) What is the equation which expresses the substances which are used in and produced from the photosynthesis process?
- (a) Glucose + Oxygen $\longrightarrow$ Water + Carbon dioxide.
- (b) Glucose + Carbon dioxide $\longrightarrow$ Water + Oxygen.
- (c) Carbon dioxide + Oxygen $\longrightarrow$ Glucose + Water.
- (d) Carbon dioxide + Water $\longrightarrow$ Glucose + Oxygen.

(B) Illustrate with drawing :

- (1) The electrical field lines between two parallel plates charged with different charges.



- (2) The appearance of the moon during the new moon phase.

- (3) The electron configuration of the element located in the second period and group 0

(4) A branched chain that consists of 4 carbon atoms.

.....

3 (A) Correct the underlined words :

(1) The compass box is made of iron.

(2) Vitamin C prevents osteoporosis.

(B) (1) What is meant by the following, with an example :

1- Fertilizers.

.....

2- Magnetic substances.

.....

(2) Answer the following :

1- **What is the type** of the bonding in a hydrogen chloride molecule ?

Illustrate with an equation showing Lewis dot structure.



2- **State one similarity and one difference between** plant cell and animal cell.

.....

4 (A) Choose the odd word (or phrase) out, then write the relation between the rest :

(1) Root nodule bacteria / Amoebic dysentery / *Penicillium* fungus / Yeast fungus.

.....

(2) Watermelon / Onion / Zucchini / Clover.

.....

(B) (1) Answer the following :

1- **State** the advantages of electrostatic plating (only two are required).

.....

2- **What is the difference between** a shadow and a penumbra ?

.....

(2) "Our armed forces destroyed the Barlev Line on the sixth of October, which corresponded the tenth of Ramadan", **What was the lunar phase :**

1- Three days before the day of crossing.

.....

2- On the night following the day of crossing.

.....

1 (A) Choose from column (B) what suits it in column (A) :

(A)	(B)
(1) The element ${}_2X$ has the same properties as the element	(1) whose atomic number is 10
(2) The Lewis dot structure $\cdot\ddot{Y}\cdot$ represents the element	(2) whose atomic number is 11
	(3) whose atomic number is 12
	(4) whose atomic number is 13

(B) Give reasons for each of the following :

(1) Neutrons are not deviated when passing through an electric field.

.....

(2) The weight of an object decreases as we move away from the surface of the Earth.

.....

(3) The mushroom fungus is an eukaryote.

.....

(4) The absence of volcanoes on gaseous planets.

.....

2 (A) Arrange the following sentences :

(1) Waxing gibbous / Waxing crescent / First quarter

"In the order of their appearance"

.....

(2) Methane molecule / Ozone molecule / Nitric acid molecule "Descendingly according to the number of constituent elements of each molecule"

.....

(B) (1) Explain the role of the following scientists in the advancement of science :

1- Rutherford.

.....

2- Newton.

.....

(2) What is the role of each of the following :

1- The phloem tissue in the transport process in plants.

.....

2- Sugar in making pickles.

.....

3 (A) Choose the correct answer :

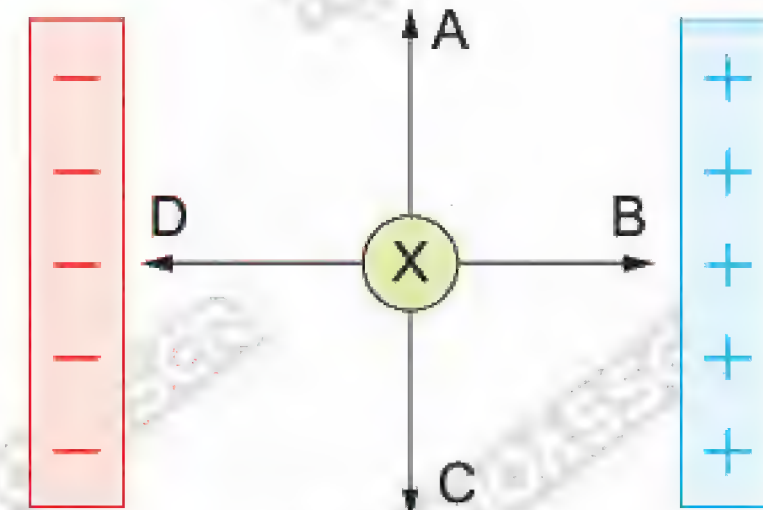
(1) When the alkali metal element (A) reacts with the element (B) from group (6 A), a compound is formed with the molecular formula

- (a) A_2B_2 (b) A_2B (c) AB_2 (d) AB

(2) The opposite figure shows a particle (X) that is free moving which carries a negative electric charge, placed between two plates that differ in charge.

In which direction does the particle (X) move?

- (a) A (b) B
(c) C (d) D



(B) Answer the following :

(1) **Why** is Egyptian blue dye not considered an organic compound ?

.....

(2) **What happens when** a single magnet is divided into several parts ?

.....

(3) **Illustrate** the type of movement in *Mimosa* plant.

.....

(4) **Identify one similarity and one difference between** bacteria **and** *Euglena*.

.....

4 (A) To whom are the following works attributed :

(1) Proposed the first scientific atomic theory.

.....

(2) Formulating a law that describes the electric forces between charged particles.

.....

(B) (1) From the opposite figure :

1- What is the name of this device, and what is it used for ?

.....

2- What is the difference between a water molecule **and** a hydrogen molecule?

.....

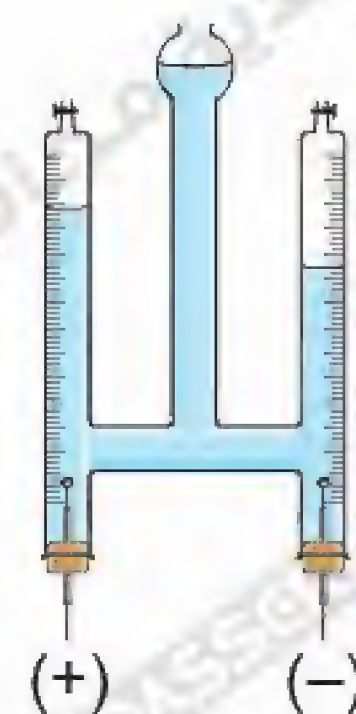
(2) The planet (X) is known as the planet of life :

1- Compare between planet (X) **and** Venus
"In terms of : Crust thickness".

.....

2- What are the consequences of planet (X) revolving around the sun ?

.....



1 (A) Write the scientific term of each of the following statements :

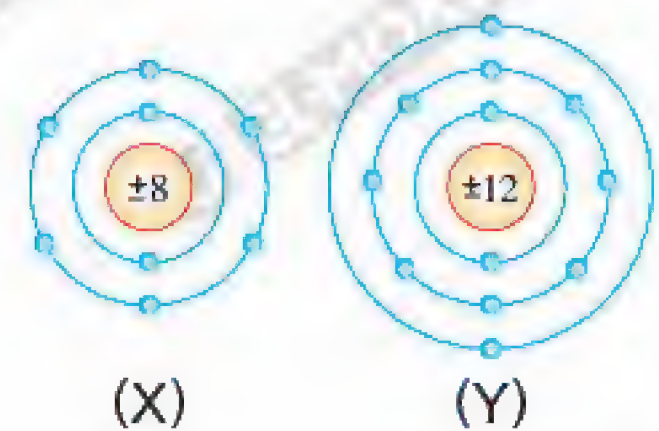
- (1) The properties of a substance that can be observed and measured in some cases.
- (2) The season in which the northern end of the Earth's axis leans away from the sun.

(B) (1) Study the two opposite figures, then deduce :

- 1- The atomic number of element (X).

- 2- The mass number of element (Y).

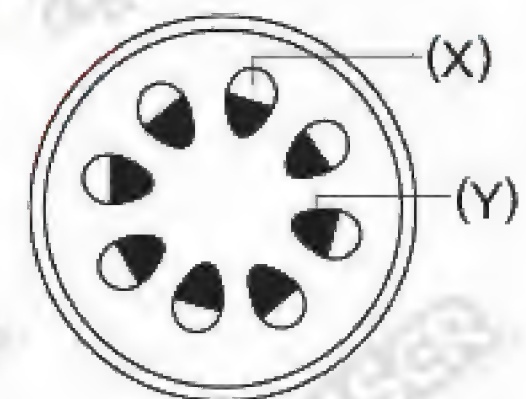
- 3- The symbol for each of the ions of the two atoms (X) and (Y).



(2) The opposite figure illustrates a section of a part of a plant :

- 1- Which part of the plant is represented by the figure ?

- 2- Replace (X) and (Y) with the appropriate data.



2 (A) Give one example for each of the following :

- (1) Protozoa.

- (2) Charging by friction.

(B) What happens when :

- (1) An object exits from the gravitational field of the Earth "In terms of : Its weight".

- (2) Transitioning from group 2A to group 3A in the second period "In terms of : The atomic number".

- (3) A stem cell divides.

- (4) The entire moon is located within the Earth's shadow.

- | | | | | | | | | | |
|---|---|--|--|--|--|--|--|---|---|
| | | | | | | | | | G |
| X | | | | | | | | Y | |
| | Z | | | | | | | | W |
| E | | | | | | | | R | |

Diagram illustrating the components of a simple pendulum setup:

- (1) Top circular disc
- (2) String
- (3) Bottom circular disc
- (4) Rectangular block supporting the discs

- (4) The occurrence of the tidal phenomenon.

1 (A) Choose the correct answer :

- (1) The length of the day can reach 13 hours and 40 minutes in the month of
① March. ② July. ③ September. ④ December.
- (2) The production of making yogurt is
① ethyl alcohol only. ② lactic acid only.
③ ethyl alcohol and lactic acid. ④ lactose and lactic acid.

(B) Write a brief summary about :

- (1) The composition of NPK fertilizer.
.....
- (2) The graduation of the atomic radius property of elements in the same group.
.....
- (3) Aerogel.
.....
- (4) Field forces.
.....

2 (A) Mark (✓) or (X) for each statement :

- (1) A magnetic brush and copper filings are used to detect fingerprints. ()
- (2) The genetic material in a bacterial cell is surrounded by a nuclear membrane. ()

(B) What is meant by each of the following :

- (1) Cellular respiration.
.....
- (2) Phases of the moon.
.....
- (3) Ionic bonding.
.....
- (4) Electric force lines.
.....

- 3 (A) Choose the odd word (or sentence) out, then mention the relation between the rest :

(1) Symbol of chromium / Symbol of sodium / Symbol of carbon / Symbol of iron.

.....

(2) *Amoeba* / Bacteria / Yeast fungus / Bread mold fungus.

.....

- (B) (1) Illustrate with drawing a sketch for each of the following :

1- The magnetic field lines between similar poles of different magnets.

2- The covalent bonding in a nitrogen molecule $_7\text{N}$



- (2) Give reasons for each of the following :

1- Leaving the roots of the bean plant in the soil after harvesting the crop.

.....

2- Metal chains hanging from fuel transport vehicles touching the ground.

.....

- 4 (A) Write the scientific term of each of the following statements :

(1) The simplest pure form of matter.

(2) An opaque body orbiting the Earth.

- (B) Answer the following :

(1) **Mention** one modification made by the scientist Moseley to Mendeleev's table.

.....

(2) **What is the difference between** contact forces **and** field forces ?

.....

(3) **Illustrate** the type of movement in the flowers of *Gazania* plant.

.....

(4) **What is the reason of** the apparent motion of the sun ?

.....



Answers of The Exams

Exam

1

1

(A) (1) (b) (2) (c)

(B) (1) 8

(2) *Amoeba* / Classified as an eukaryote.

(3)	1-	Mercury	Earth
		Its atmosphere is very thin, composed of hydrogen and helium gases	Its atmosphere is composed mainly of nitrogen and oxygen gases
	2-	The microbe found in the root nodules of the bean plant	The microbe causing dough fermentation
		The genetic material is located in the cytoplasm	It is located within the nucleus

2

(A) (1) Hoffmann voltameter / Electrically / Two elements.

(2) The north / The south.

(B) (1) 1- The moon is located between the sun and the earth, and each of the sun, moon and earth aligned on a straight line.

2- Headache and high fever, where in body temperature can rise to 40°C

(2) 1- It transforms into a positive ion carrying a number of positive charges equal to the number of lost electrons.

2- The attraction force between them decreases.

3

(A) (1) The electron. (2) The electric field.

(B) (1) 1- Used to determine the Earth's four main geographical directions.

2- Used in the construction of military aircraft structures.

(2) 1- * **Similarity** : Both *Amoeba* and bacteria are unicellular organisms.

* **Difference** : *Amoeba* is an eukaryote, while bacteria are prokaryotes.

2- * **Similarity** : The earth, while orbiting the sun, lies on the line connecting the sun and the moon.

* **Difference** : In a total eclipse, the moon is entirely within the earth's shadow, whereas in a partial eclipse, part of the moon is in the earth's shadow and the other part is in the earth's penumbra.

4

(A) (1) X (2) X

(B) (1) Ionic bonding.

(2) Respire through the lungs and skin.

(3) It depends on the length and direction of the shadow resulting from the apparent motion of the sun.

(4) Lactose sugar / It converts to lactic acid.

Exam

2

1

(A) (1) Deuterium / Tritium. (2) Friction / Contact.

(B) (1) Used in electricity generation as a renewable energy source.

(2) Used in filling car tyres.

(3) Characterized by its ability to renew itself through division and the production of more stem cells.

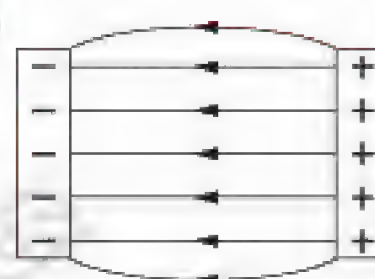
(4) Used in the production of Roquefort cheese.

2

(A) (1) (c)

(2) (d)

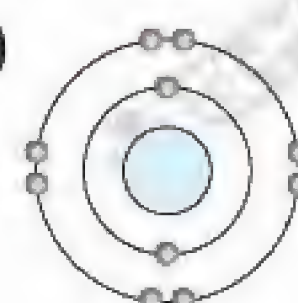
(B) (1)



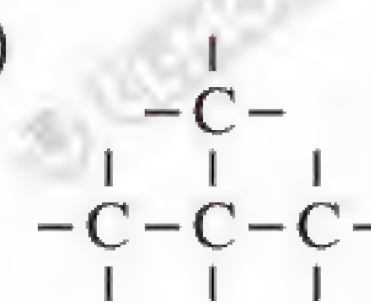
(2)



(3)



(4)



3

(A) (1) Plastic. (2) Vitamin D

(B) (1) 1- * Chemical compounds that are used to improve the agricultural production.

* For example : NPK fertilizer.

2- * Substances that are attracted to magnets.

* For example : Iron and nickel.

(2) 1- Covalent bonding.



2- * **Similarity** : Both plant cell and animal cell contain mitochondria.

* **Difference** : Plant cell contains a cell wall, whereas animal cell does not contain a cell wall.

4

(A)

	The odd word	The relation between the rest
(1)	Amoebic dysentery	• From microbes.
(2)	Clover	• Summer crops.

(B) (1) 1- * Ensure an even layer of paint.

* Reduces paint waste.

2- * **Shadow** : A dark region where no light reaches due to the presence of an opaque object in the path of the light rays.

* **Penumbra** : A partially illuminated region where part of the light rays reaches and surrounds the shadow created by the presence of an opaque object in the path of the light rays.

(2) 1- First quarter phase.

2- Waxing gibbous phase.

Exam

3

1

(A) (1 / 1), (2 / 4).

(B) (1) Because neutrons are electrically neutral

(2) Because the intensity of the Earth's gravitational field decreases as we move away from the Earth's surface.

(3) Because its genetic material is surrounded by a nuclear membrane, separating it from the cytoplasm.

(4) Because it does not have a rocky crust.

2

(A) (1) Waxing crescent phase - First quarter phase - Waxing gibbous phase.

(2) Nitric acid molecule > Methane molecule > Ozone molecule.

(B) (1) 1- Established the first model of the atom based on experimental basis.

2- Discovered that all material objects in the universe attract each other.

(2) 1- Transports the food produced by photosynthesis process from the leaves to the rest of the plant.

2- It acts as a food source for beneficial bacteria and improves the flavour.

3

(A) (1) (b) (2) (b)

(B) (1) Because it does not contain carbon and hydrogen atoms mainly in its molecular formula.

(2) Each new part of them forms a new magnet with two poles, one is north and the other is south.

(3) Not locomotion movement.

(4) * **Similarity** : Unicellular organisms.

* **Difference** : Bacteria are considered prokaryotic organisms, whereas *Euglena* is considered eukaryotic organisms.

4

(A) (1) Scientist Dalton.

(2) Scientist Charles-Augustin de Coulomb.

(B) (1) 1- Hoffmann voltameter is used for the electrolysis of water into its elements.

2- The water molecule is considered a compound molecule, while the hydrogen molecule is considered an element molecule.

(2) 1-	Planet X (Earth)	Venus
	Has a thicker crust than that of Venus	Has a thick crust compared to that of Mercury

2- The alternation of the four seasons
(The cycle of the seasons).

Exam 4

1

(A) (1) Physical properties.

(2) Winter.

(B) (1) 1- The atomic number of element (X) = 8

2- The mass number of element (Y)

= Number of protons + Number of neutrons

= 12 + 12 = 24

3- X^{2-} , Y^{2+}

(2) 1- Stem.

2- (X): phloem, (Y): Xylem.

2

(A) (1) *Amoeba*.

(2) Rub the rod of ebonite with a piece of wool.

"Or any other correct answer."

(B) (1) The weight of the object becomes zero.

(2) The atomic number increases by one.

(3) It produces more stem cells and renews itself.

(4) A total lunar eclipse occurs and appears as an opaque disc.

3

(A) (1) X, Y (2) W, G

(B) (1) • **The animal cell** : Does not have a cell wall.

• **The bacterial cell** : Has a cell wall.

(2) • **Mars** : Composed mainly of carbon dioxide gas.

• **Jupiter** : Composed of hydrogen and helium gases.

(3) • **The electroscope is used for :**

1- Detecting the electrical state of an object.

2- Determining the type of charge on the charged object.

3- Comparing the amount of charges present on different charged objects.

• **The coulombmeter** : Used to measure weak electrical charges.

(4) • **Euglena** : Moves using a flagellum.

• **Paramecium** : Moves using cilia.

4

(A) (1) c

(2) b

(B) (1) Because on the eleventh day of the beginning of the Arabic month, $\frac{3}{4}$ of the face of the moon is illuminated from the right side (the waxing gibbous phase), and after passing 17 days from the beginning of the Arabic month $\frac{3}{4}$ of the face of the moon is illuminated from the left side (the waning gibbous phase).

(2) Because it is a mixture whose components cannot be distinguished by the naked eye.

(3) Because the magnetic attraction force is the strongest at its poles.

(4) Due to the gravitational attraction force between the moon and the Earth.

Exam 5

1

(A) (1) b

(2) b

(B) (1) It is composed of potassium, which is essential for the healthy growth of plants, phosphorus, which is essential for strengthening plant roots, and nitrogen, which is essential for the greening of plant leaves.

(2) The atomic radii of elements in the same group increase with the atomic number increases.

(3) A transparent, low density material where 99.8% of its composition is of air only, is considered the lightest solid material known to date, with high durability and distinguished by has excellent insulating properties.

- (4) Forces that act on objects over a certain distance without touching, such as electrostatic forces, magnetic forces and gravitational forces.

2

(A) (1) X

(2) X

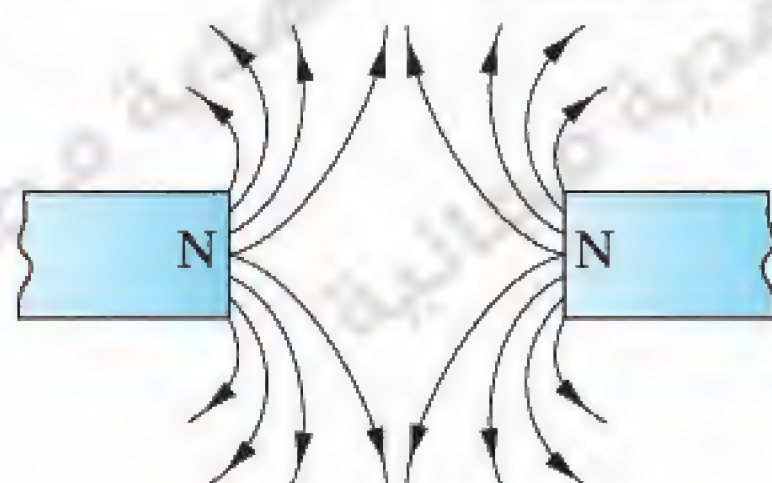
- (B) (1) A vital process in which organic nutrients, especially glucose, are broken down in the presence of oxygen to release the energy required to carry out all biological activities.
- (2) The different phases that the moon undergoes during its orbit around the Earth due to its varying position relative to both the sun and the Earth.
- (3) An electrical attraction between a positively charged ion (cation) and a negatively charged ion (anion) forming an ionic compound molecule.
- (4) Imaginary lines that illustrate the path taken by a small free-moving positive charge placed in an electric field.

3

(A)

	The odd word	The relation between the rest
(1)	Symbol of carbon	• Elements whose symbols consist of two letters.
(2)	Bacteria	• From eukaryotes.

(B) (1) 1-



- (2) 1- In order for the roots to decompose by decomposition bacteria into nitrogenous compounds soluble in water, which increases soil fertility and maintains the cycle of necessary elements in nature.

- 2- To discharge the electric charges generated by the friction of the fuel with the surface of the fuel tank to prevent fuel combustion.

4

(A) (1) The element.

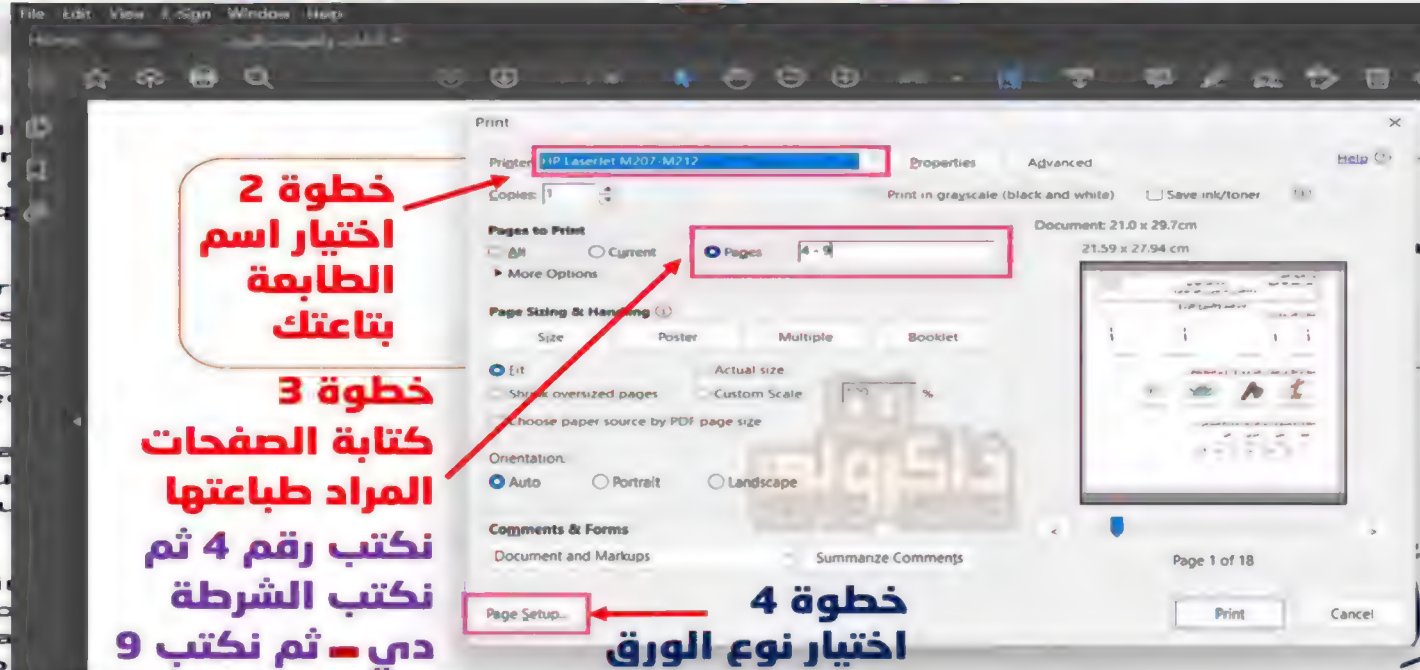
(2) The moon.

- (B) (1) Added a group of noble gases to the periodic table.
- (2) • **Field forces** : Affect objects within their field at a certain distance without contact.
• **Contact forces** : Affect objects upon contact and do not have field.
- (3) Not locomotion movement.
- (4) Due to the rotation of the Earth on its axis in front of the sun.

كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



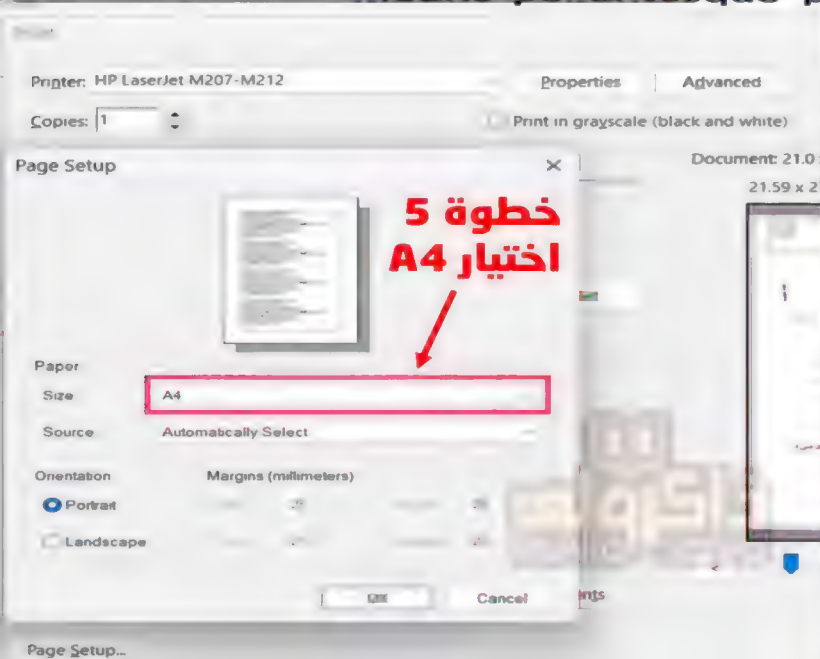
خطوة 1



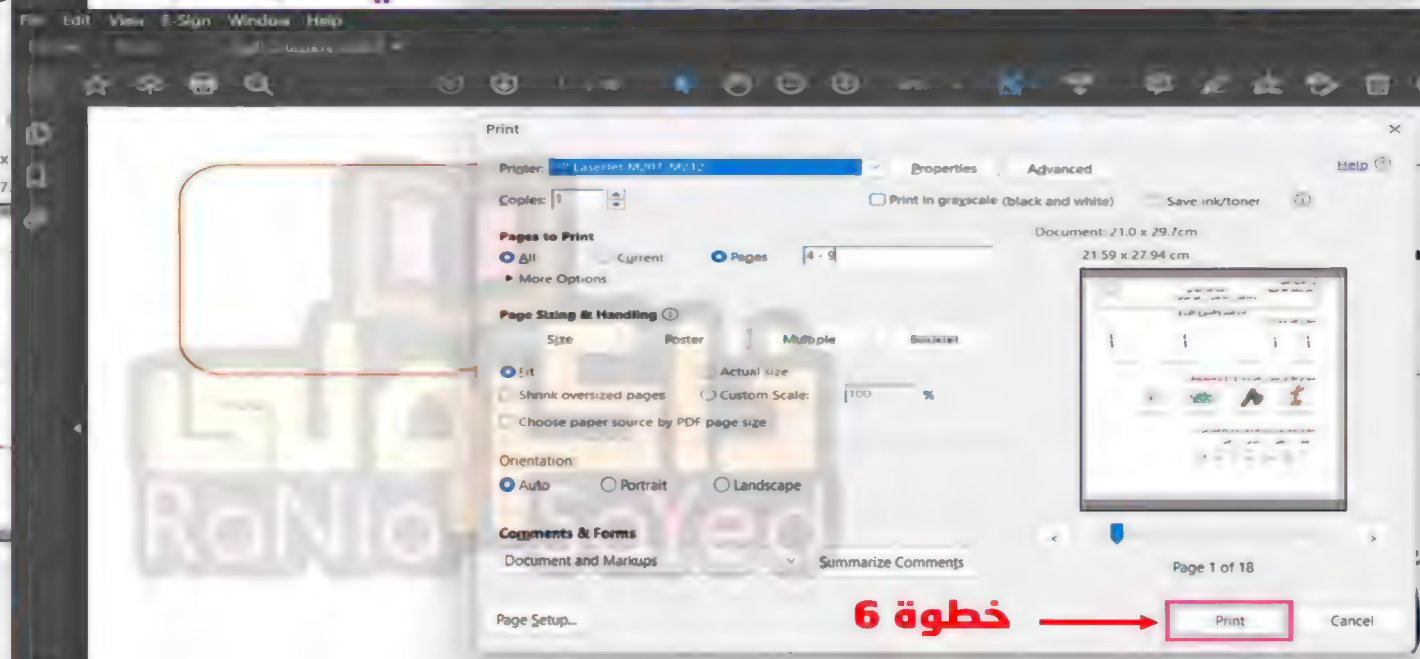
خطوة 2
اختيار اسم
الطابعة
بتاعتك

خطوة 3
كتابة الصفحات
المراد طباعتها
نكتب رقم 4 ثم
نكتب الشرطة
دي - ثم نكتب 9

خطوة 4
اختيار نوع الورق



خطوة 5
اختيار A4



خطوة 6

حصل الآن

مجانا وحصريا

امتحانات رقم (2)

الترم الاول



Model (1)

24
Marks

1 A) Choose the correct answer:

- 1 The nucleus of an oxygen atom (${}_8\text{O}$) contains protons.
a) 2 b) 8 c) 16 d) 24
- 2 Which of the following is considered a field force?
a) Friction. b) Collision. c) Magnetism. d) Elasticity.

B) First: What happens when ...?

- 1 The Moon is found completely inside the Earth's shadow.
.....

- 2 Keeping yogurt out of the refrigerator.
.....

Second: Compare between the following:

- 1 Mammals and fish (with respect to their respiratory organs)

Mammals	Fish
.....	

- 2 Iron and copper (with respect to their chemical symbols and their ability to be attracted to the magnet)

Points of comparison	Iron	Copper
Chemical symbols	Fe	Cu
The ability to be attracted to the magnet	Magnetic material	Non-magnetic material

2 A) Write the scientific term:

- 1 Electrostatic attraction between a positive ion and a negative ion. ()
- 2 The simplest pure form of matter that cannot be separated into components by physical or chemical methods. ()

B) Give a reason:

- 1 Fuel transport vehicles must be in contact with the ground using metal chains.
.....

- 2 The nodular bacteria have great importance for leguminous plants.
.....

- 3 The length of the shadow at noon is the shortest.
.....

4 The atom is electrically neutral.

3 A) Put (✓) or (X):

1 Elements in the same group have similar chemical properties. (✓)

2 The mass of a body on Earth = weight $\times$ gravitational field strength. (X)

B) Mention the importance of each of the following:

1 Hofmann Voltmeter:

2 Penicillium notatum fungus.

3 Helium gas:

4 Stem cells in humans:

4 A) Complete the following sentences:

1 The group of _____ planets are described as rocky planets such as Earth.

2 The valency of alkaline earth metals is _____, while the valency of halogens is _____.

B) Answer the following questions:

1 An element (M) whose nucleus contains 12 neutral particles and has 23 nucleons:

(A) Calculate the number of protons and neutrons.

(B) Write the symbol of the element, including Z and A.

Solution:

2 Classify the following living organisms according to what you have studied, then mention the similarities between them:

1- Bacteria

2- Euglena

	Bacteria	Euglena
Classification	Prokaryotes - Unicellular organisms	Eukaryote - Unicellular organism
Similarities	Both of them are unicellular organisms.	

Model (2)

24
Marks

1 A) Write the scientific term:

- 1 The electric charges accumulate on the surfaces of objects when they lose or gain electrons.
()
- 2 The phase of the Moon when it appears as a completely dark disk at the end of the lunar month.
()

B) Give a reason:

- 1 The weight of an object changes from one planet to another.
-
- 2 Nitrogen is used to fill car tires instead of air.
-
- 3 Classifying living organisms is important.
-
- 4 An atom becomes a positive ion when it loses one or more electrons.
-

2 A) Correct the underlined words:

- 1 The sand and salt solution mixture can be separated by condensation followed by evaporation.
()
- 2 The mathematical relation $2n^2$ determines the number of neutrons in the main energy levels.
()

B) First: Compare between each of the following:

- 1 Mercury and Earth (With respect to the atmosphere and volcanic activity).

Points of comparison	Mercury	Earth
Atmosphere	Very thin, composed of hydrogen and helium gases	Composed mainly of nitrogen and oxygen gases
Volcanic activity	No active volcanoes	Many active volcanoes

Second: Mention one use for each of the following:

- 1 Aluminum-titanium alloy:
-
- 2 Electroscope:
-

3 A) Cross out the odd word:

- 1 Arteries – Veins – Heart – Phloem Rissues ()
- 2 Number of Protons – Number of Electrons – Atomic Number – Mass Number ()

B) What happens when ...?

- 1 The angle at which sunlight falls on the different areas of Earth's surface changes.

- 2 A sodium atom ($_{11}\text{Na}$) loses an electron from its outermost energy level.

- 3 An ebonite rod is rubbed with wool (With respect to types of charges).

- 4 The human body lacks vitamin D.

4 A) Choose the correct answer:

- 1 Gravity is a type of
 a) energy b) matter c) force d) speed
- 2 The difference between the mass number (A) and atomic number (Z) equals the number of
 a) electrons b) protons c) nucleons d) neutrons

B) Answer the following questions:

First: Answer the following problem:

- A body has a mass of 100 kg on Earth. Calculate the following:

- (1) Its mass on the Moon:

- (2) Its weight on Earth, given that the gravitational field strength is 10 N/kg:

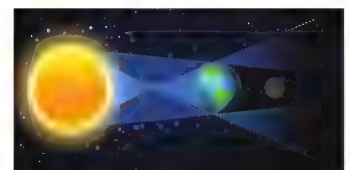
Second: 1- Write the electronic configuration for ($_{19}\text{K}$), then determine:

The type of atom, the valency and the type of ion.

	Electronic configuration	Type of atom	Valency	Type of ion
$_{19}\text{K}$	2,8,8,1	Metal	Monovalent	Positive ion

- 2- Look at the opposite figure, then answer:

- What is the name of the region where the Moon is located?



- What phenomenon is shown in the diagram?

Model (3)

24
Marks

1 A) Complete the following sentences:

- 1 The oxygen molecule O_2 is an example of _____ molecule, while methane CH_4 is an example of _____ molecule.
- 2 Yogurt bacteria convert lactose sugar in the milk into _____, which gives yogurt its distinctive taste and texture.

B) Give a reason:

- 1 The mass number is often greater than the atomic number.

- 2 The difference in the angle at which sunlight falls on different areas of Earth's surface.

- 3 A glass rod and an ebonite rod attract each other when rubbed with silk.

- 4 Bacteria differ from amoebas although both are unicellular organisms.

2 A) Put (✓) or (X):

- 1 The Moon appears as a partial disk during a total lunar eclipse. (X)
- 2 Elements were arranged in Mendeleev's table in ascending order according to their atomic number. (X)

B) Answer the following questions:

First: Mention the importance of:

- 1 Guard cells in plants:

- 2 The coulometer:

Second: Write the electronic configuration for the following elements, then determine their location in the modern periodic table:

1 $_{10}\text{Ne}$

2 $_{20}\text{Ca}$

Element	Electronic configuration	No. of period	No. of group
$_{10}\text{Ne}$	2,8	Period 2	Group (0)
$_{20}\text{Ca}$	2,8,8,2	Period 4	Group 2A

3 A) Cross out the odd word:

- 1 Iron – Copper – Cobalt – Nickel ()
- 2 Prokaryote – Relatively Small – Multicellular – Unicellular ()

B) Answer the following questions:

First: Mention one difference between:

- 1 Yeast fungus and penicillium notatum fungi (with respect to the use):

Using of yeast fungus	Using of lactic acid bacteria
It is used in making bread and ethyl alcohol production.	They convert lactose, "Milk sugar" into lactic acid, which gives yogurt its sour taste and thickness.

- 2 Mars and Jupiter (with respect to atmospheric composition):

Mars	Jupiter
Its atmosphere is composed mainly of carbon dioxide gas.	It is a gaseous planet, its atmosphere composed of hydrogen and helium gases.

Second: An element with a mass number of 40 and 20 neutrons in its nucleus. Determine:

- 1 The number of occupied energy levels in the atom. ()
- 2 The number of electrons in the outermost energy level. ()

4 A) Write the scientific term:

- 1 Compounds with high melting points that dissolve in water. ()
- 2 The arrangement of materials according to their ease of losing electrons when rubbed together. ()

B) What happens when ...?

- 1 A glass rod is brought close to an ebonite rod after rubbing both with cotton cloth.

- 2 A freely moving magnet is suspended from its center.

- 3 A part of the moon enters Earth's shadow.

- 4 The atomic number increases within the same group (regarding atomic radius).

Model (4)

24
Marks

1 A) Choose the correct answer:

- 1 Paramecium and bacteria are similar in that both are
 a) multicellular b) unicellular c) prokaryotes d) eukaryotes
- 2 An element located in the third period and group 5A has an atomic number of
 a) 5 b) 8 c) 13 d) 15

B) Compare between each of the following:

- 1 S-block and P-block elements (with respect to their location in the periodic table and the number of groups):

Points of comparison	S block elements	P block elements
Location	Left side of the table	Right side of the table
Number of groups	2 groups	6 groups

- 2 Photosynthesis process and cellular respiration (with respect to their products and the organelle responsible for each):

Points of comparison	Photosynthesis process	Cellular respiration
Products	Oxygen gas Glucose sugar	Carbon dioxide gas Water Energy
Responsible organelles	Green plastids	Mitochondria

2 A) Write the scientific term:

- 1 An imaginary line passing through Earth from the North Pole to the South Pole through Earth's center. (.....)
- 2 The unit that is used to measure electric charge. (.....)

B) What happens when ...?

- 1 Contaminated food is ingested with the Entamoeba histolytica microbe.

.....

- 2 The apparent height of the Sun increases in the sky during the day.

.....

- 3 The nucleus of an atom doesn't contain neutrons.

.....

- 4 A non-metal atom gains one or more electrons during a chemical reaction.

.....

3 A) Correct the underlined words:

- 1 All inner planets have a thick crust except Mars. (.....)
- 2 The molecule of Egyptian blue dye is composed of three elements. (.....)

B) Mention one importance for each of the following:

- 1 Tide:
- 2 Penicillium roqueforti fungus:
-
- 3 Aerogel and its exceptional insulation ability:
-
- 4 Stainless steel:

4 A) Mention the number for each of the following:

- 1 The number of gaseous planets in the solar system. (.....)
- 2 The number of electrons in an ion of an element with an atomic number of 13. (.....)

B) Answer the following questions:

- 1 Write two properties of electric field lines.
1-
2-
- 2 Classify the following materials into two groups: (Copper – Cobalt – Silver – Iron)

Magnetic materials	Non-magnetic materials
Iron - Cobalt	Copper - Silver

- 3 Compare between plant and animal cells (with respect to the presence of centrioles and chloroplasts):

Points of comparison	Plant cell	Animal cell
Centrioles	Absent	Present
Chloroplasts	Present	Absent

- 4 In light of your understanding of electric field lines, indicate the type of positive charge or negative charge that is placed in the red and blue circles.



1 A) Choose the correct answer:

1 is an example of a heterogeneous mixture.

- a) Milk b) Oil in water c) Mineral water d) Atmospheric air

2 All the following are from the components of an animal cell except

- a) centriole b) plasma membrane c) cell wall d) nucleus

B) What happens when ...?

1 Two objects with different electric charges are brought close to each other.

.....

2 Methane gas is found in the atmosphere of Uranus planet.

.....

3 The atomic number equals the mass number in a hydrogen atom.

.....

4 The roots of leguminous plants are left in the soil after harvest.

.....

2 A) Put (✓) or (X):

1 Helium is a flammable gas used to fill balloons.

(X)

2 A person's weight on the Moon is greater than their weight on Earth.

(X)

B) Give a reason:

1 The compass needle takes a fixed direction in the same place.

.....

2 The phenomenon of the Moon's phases occurs.

.....

3 Green plants and algae perform photosynthesis.

.....

4 Ionic bonds only produce compound molecules.

.....

3 A) Complete the following sentences:

1 and are considered a prokaryotic beneficial microbe.

2 The symbol for the element carbon is —, and the symbol for sodium is —.

B) Define the following:

1 Ion:

.....

2 Apparent motion of the Sun:

.....

3 Law of attraction and repulsion:

.....

4 Valence electrons:

.....

4 A) State the number for each of the following:

1 The total number of elements in the modern periodic table: ()

2 The number of particles in the nucleus of a hydrogen atom: ()

B) Answer the following questions:

1 Draw the electric field lines of a positive charge.

.....

2 How can microbes enter the human body?

.....

3 What is meant by the atomic number?

.....

4 Calculate the weight of an object with a mass of 6 kg, given that the Earth's gravitational field strength is 10 N/kg.

.....

Model (1) Answer

24
Marks

1 A) Choose the correct answer:

- 1 The nucleus of an oxygen atom (${}_8\text{O}$) contains protons.
a) 2 b) **8** c) 16 d) 24
- 2 Which of the following is considered a field force?
a) Friction. b) Collision. c) **Magnetism.** d) Elasticity.

B) First: What happens when ...?

- 1 The Moon is found completely inside the Earth's shadow.
- **A total lunar eclipse occurs.**
- 2 Keeping yogurt out of the refrigerator.
- **The lactic acid bacteria will continue its action and increase the yogurt acidity which spoils its taste.**

Second: Compare between the following:

- 1 Mammals and fish (with respect to their respiratory organs)

Mammals	Fish
They respire oxygen gas using two lungs.	They respire oxygen gas using gills.

- 2 Iron and copper (with respect to their chemical symbols and their ability to be attracted to the magnet)

Points of comparison	Iron	Copper
Chemical symbols	Fe	Cu
The ability to be attracted to the magnet	Magnetic material	Non-magnetic material

2 A) Write the scientific term:

- 1 Electrostatic attraction between a positive ion and a negative ion. **(Ionic bond)**
- 2 The simplest pure form of matter that cannot be separated into components by physical or chemical methods. **(Element)**

B) Give a reason:

- 1 Fuel transport vehicles must be in contact with the ground using metal chains.
- **To discharge the electric charges produced by the friction of the fuel with the surface of the fuel tank to prevent fuel consumption.**
- 2 The nodular bacteria have great importance for leguminous plants.
- **Because they provide them with nitrogen in a usable form to produce proteins.**

- 3** The length of the shadow at noon is the shortest.

- **Because the Sun's apparent height is the highest at noon.**

- 4 The atom is electrically neutral.

- **Because the number of protons (positive charges) inside the nucleus of an atom equals the number of electrons (negative charges) that revolve around the nucleus.**

3 A) Put (✓) or (X):

- 📌 Elements in the same group have similar chemical properties.

(✓)

- 2 The mass of a body on Earth = weight $\times$ gravitational field strength.

(X)

B) Mention the importance of each of the following:

- ### Hofmann Voltmeter:

- It is used in water electrolysis into its elements.

- 2 *Penicillium notatum* fungus.

- **It secretes a substance that stops the growth and reproduction of a certain type of bacteria.**

- 3 Helium gas:

- It is used to fill balloons.

- #### 4 Stem cells in humans:

- **They have the ability to be transformed and differentiated into all differentiated cells of the body.**

4 A) Complete the following sentences:

- 1 The group of **inner** planets are described as rocky planets such as Earth.

- 2 The valency of alkaline earth metals is **divalent**, while the valency of halogens is **monovalent**.

B) Answer the following questions:

- 1 An element (M) whose nucleus contains 12 neutral particles and has 23 nucleons:

(A) Calculate the number of protons and neutrons.

(B) Write the symbol of the element, including Z and A.

Solution:

A) No. of protons = No. of nucleons - No. of neutrons

$$= 23 - 12 = 11$$

No. of neutrons = 12

B) ${}_{11}^{23}\text{M}$

- 2 Classify the following living organisms according to what you have studied, then mention the similarities between them:

1- Bacteria

2- Euglena

	Bacteria	Euglena
Classification	Prokaryotes - Unicellular organisms	Eukaryote - Unicellular organism
Similarities	Both of them are unicellular organisms.	

Model (2) Answer

24
Marks

1 A) Write the scientific term:

- 1 The electric charges accumulate on the surfaces of objects when they lose or gain electrons.
(Static electricity)
- 2 The phase of the Moon when it appears as a completely dark disk at the end of the lunar month.
(New Moon)

B) Give a reason:

- 1 The weight of an object changes from one planet to another.
- Because the gravitational field intensity varies from one planet to another.
- 2 Nitrogen is used to fill car tires instead of air.
- Because nitrogen is not affected by temperature changes and does not react with rubber.
- 3 Classifying living organisms is important.
- To facilitate their studying and identification.
- 4 An atom becomes a positive ion when it loses one or more electrons.
- Because the number of positively charged protons becomes greater than the number of negatively charged electrons.

2 A) Correct the underlined words:

- 1 The sand and salt solution mixture can be separated by condensation followed by evaporation.
(filtration)
- 2 The mathematical relation $2n^2$ determines the number of neutrons in the main energy levels.
(electrons)

B) First: Compare between each of the following:

- Mercury and Earth (With respect to the atmosphere and volcanic activity).

Points of comparison	Mercury	Earth
Atmosphere	Very thin, composed of hydrogen and helium gases	Composed mainly of nitrogen and oxygen gases
Volcanic activity	No active volcanoes	Many active volcanoes

Second: Mention one use for each of the following:

- 1 Aluminum-titanium alloy:
- It is used in the construction of military aircraft frames.
- 2 Electroscope:
- It is used to detect if an object is electrically charged and the type of charge on a charged object.

3 A) Cross out the odd word:

- 1 Arteries – Veins – Heart – Phloem Rissues (phloem tissues)
 2 Number of Protons – Number of Electrons – Atomic Number – Mass Number (Mass Number)

B) What happens when ...?

- 1 The angle at which sunlight falls on the different areas of Earth's surface changes.
 - The intensity of sunlight that falls on Earth differs from one place to another.
 2 A sodium atom ($_{11}\text{Na}$) loses an electron from its outermost energy level.
 - It becomes a positively charged ion with a single positive charge.
 3 An ebonite rod is rubbed with wool (With respect to types of charges).
 - The ebonite rod gains electrons and has a negative charge, while the wool loses electrons and has a positive charge.
 4 The human body lacks vitamin D.
 - The person will suffer from osteoporosis.

4 A) Choose the correct answer:

- 1 Gravity is a type of
 a) energy b) matter c) **force** d) speed
 2 The difference between the mass number (A) and atomic number (Z) equals the number of
 a) electrons b) protons c) nucleons d) **neutrons**

B) Answer the following questions:

First: Answer the following problem:

- A body has a mass of 100 kg on Earth. Calculate the following:

(1) Its mass on the Moon:

- The mass remains 100 kg because mass doesn't change by changing the place.

(2) Its weight on Earth, given that the gravitational field strength is 10 N/kg:

- **Weight on Earth = mass $\times$ gravitational field strength = $100 \times 10 = 1000 \text{ N}$.**

Second: (1) Write the electronic configuration for ($_{19}\text{K}$), then determine:

The type of atom, the valency and the type of ion.

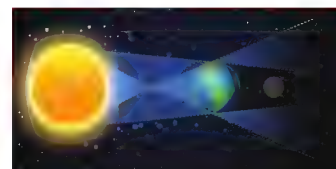
	Electronic configuration	Type of atom	Valency	Type of ion
$_{19}\text{K}$	2,8,8,1	Metal	Monovalent	Positive ion

(2) Look at the opposite figure, then answer:

- What is the name of the region where the Moon is located?

- **Umbra shadow.**

- What phenomenon is shown in the diagram? - **Total lunar eclipse.**



Model (3) Answer

24
Marks

1 A) Complete the following sentences:

- 1 The oxygen molecule O_2 is an example of **element** molecule, while methane CH_4 is an example of **compound** molecule.
- 2 Yogurt bacteria convert lactose sugar in the milk into **lactic acid**, which gives yogurt its distinctive taste and texture.

B) Give a reason:

- 1 The mass number is often greater than the atomic number.
- **Because the mass number equals the sum of protons and neutrons, whereas the atomic number equals only the number of protons.**
- 2 The difference in the angle at which sunlight falls on different areas of Earth's surface.
- **Due to the tilt of Earth's axis.**
- 3 A glass rod and an ebonite rod attract each other when rubbed with silk.
- **As by rubbing both rods with silk, the glass rod loses electrons and has positive charges, which attract the negative charges on the ebonite rod that gains electrons through rubbing.**
- 4 Bacteria differ from amoebas although both are unicellular organisms.
- **Because bacteria are prokaryotic organisms, while amoebas are eukaryotic organisms.**

2 A) Put (✓) or (X):

- 1 The Moon appears as a partial disk during a total lunar eclipse. (X)
- 2 Elements were arranged in Mendeleev's table in ascending order according to their atomic number. (X)

B) Answer the following questions:

First: Mention the importance of:

- 1 Guard cells in plants:
- **They control the opening and closing of stomata on plant leaves.**
- 2 The coulometer:
- **It measures weak electric charges.**

Second: Write the electronic configuration for the following elements, then determine their location in the modern periodic table:

1 $_{10}\text{Ne}$

2 $_{20}\text{Ca}$

Element	Electronic configuration	No. of period	No. of group
$_{10}\text{Ne}$	2,8	Period 2	Group (0)
$_{20}\text{Ca}$	2,8,8,2	Period 4	Group 2A

3 A) Cross out the odd word:

- 1 Iron – Copper – Cobalt – Nickel (Copper)
- 2 Prokaryote – Relatively Small – Multicellular – Unicellular (Multicellular)

B) Answer the following questions:

First: Mention one difference between:

- 1 Yeast fungus and penicillium notatum fungi (with respect to the use):

Using of yeast fungus	Using of lactic acid bacteria
It is used in making bread and ethyl alcohol production.	They convert lactose, "Milk sugar" into lactic acid, which gives yogurt its sour taste and thickness.

- 2 Mars and Jupiter (with respect to atmospheric composition):

Mars	Jupiter
Its atmosphere is composed mainly of carbon dioxide gas.	It is a gaseous planet, its atmosphere composed of hydrogen and helium gases.

Second: An element with a mass number of 40 and 20 neutrons in its nucleus. Determine:

- 1 The number of occupied energy levels in the atom. (4 energy levels)
- 2 The number of electrons in the outermost energy level. (2 electrons)

4 A) Write the scientific term:

- 1 Compounds with high melting points that dissolve in water. (Ionic compounds)
- 2 The arrangement of materials according to their ease of losing electrons when rubbed together. (Electrostatic series)

B) What happens when ...?

- 1 A glass rod is brought close to an ebonite rod after rubbing both with cotton cloth.
- They attract each other.
- 2 A freely moving magnet is suspended from its center.
- It takes north and south direction of the Earth.
- 3 A part of the moon enters Earth's shadow.
- A partial lunar eclipse occurs.
- 4 The atomic number increases within the same group (regarding atomic radius).
- The atomic radius increases.

Model (4) Answer

24
Marks

1 A) Choose the correct answer:

- 1 Paramecium and bacteria are similar in that both are
 a) multicellular b) **unicellular** c) prokaryotes d) eukaryotes
- 2 An element located in the third period and group 5A has an atomic number of
 a) 5 b) 8 c) 13 d) **15**

B) Compare between each of the following:

- 1 S-block and P-block elements (with respect to their location in the periodic table and the number of groups):

Points of comparison	S block elements	P block elements
Location	Left side of the table	Right side of the table
Number of groups	2 groups	6 groups

- 2 Photosynthesis process and cellular respiration (with respect to their products and the organelle responsible for each):

Points of comparison	Photosynthesis process	Cellular respiration
Products	Oxygen gas Glucose sugar	Carbon dioxide gas Water Energy
Responsible organelles	Green plastids	Mitochondria

2 A) Write the scientific term:

- 1 An imaginary line passing through Earth from the North Pole to the South Pole through Earth's center. **(Earth's axis)**
- 2 The unit that is used to measure electric charge. **(Coulomb)**

B) What happens when ...?

- 1 Contaminated food is ingested with the Entamoeba histolytica microbe.
- The person will be infected with dysentery disease.
- 2 The apparent height of the Sun increases in the sky during the day.
- The length of the shadow cast by an object decreases.
- 3 The nucleus of an atom doesn't contain neutrons.
- The atomic number equals the mass number.
- 4 A non-metal atom gains one or more electrons during a chemical reaction.
- It becomes a negatively charged ion.

3 A) Correct the underlined words:

- 1 All inner planets have a thick crust except Mars. (Mercury)
2 The molecule of Egyptian blue dye is composed of three elements. (Four)

B) Mention one importance for each of the following:

- 1 Tide: **It is used to generate electricity.**
2 Penicillium roqueforti fungus:
It is used in making Roquefort cheese.
3 Aerogel and its exceptional insulation ability:
It's used in making jackets for researchers in Antarctica.
4 Stainless steel: **It's used to make cooking utensils.**

4 A) Mention the number for each of the following:

- 1 The number of gaseous planets in the solar system. (4 planets)
2 The number of electrons in an ion of an element with an atomic number of 13. (10 electrons)

B) Answer the following questions:

- 1 Write two properties of electric field lines.
1- Imaginary lines that do not intersect.
2- Start with positive charges and end with negative charges.

- 2 Classify the following materials into two groups: (Copper – Cobalt – Silver – Iron)

Magnetic materials	Non-magnetic materials
Iron - Cobalt	Copper - Silver

- 3 Compare between plant and animal cells (with respect to the presence of centrioles and chloroplasts):

Points of comparison	Plant cell	Animal cell
Centrioles	Absent	Present
Chloroplasts	Present	Absent

- 4 In light of your understanding of electric field lines, indicate the type of positive charge or negative charge that is placed in the red and blue circles.



- The red circle contains a positive charge, while the blue circle contains negative charges.

Model (5) Answer

24
Marks

1 A) Choose the correct answer:

1 is an example of a heterogeneous mixture.

- a) Milk b) **Oil in water** c) Mineral water d) Atmospheric air

2 All the following are from the components of an animal cell except

- a) centriole b) plasma membrane c) **cell wall** d) nucleus

B) What happens when ...?

1 Two objects with different electric charges are brought close to each other.

- **They attract each other.**

2 Methane gas is found in the atmosphere of Uranus planet.

- **The planet appears bluish-green in color.**

3 The atomic number equals the mass number in a hydrogen atom.

- **The nucleus of the hydrogen atom has no neutrons.**

4 The roots of leguminous plants are left in the soil after harvest.

- **Soil fertility increases.**

2 A) Put (✓) or (X):

1 Helium is a flammable gas used to fill balloons.

(X)

2 A person's weight on the Moon is greater than their weight on Earth.

(X)

B) Give a reason:

1 The compass needle takes a fixed direction in the same place.

- **Because it is a magnet that takes the north and south direction of the Earth.**

2 The phenomenon of the Moon's phases occurs.

- **Due to the Moon's elliptical orbit around Earth.**

3 Green plants and algae perform photosynthesis.

- **Because they have chloroplasts that help them make their own food.**

4 Ionic bonds only produce compound molecules.

- **Because they are formed by the combination of two different elements: a metal and a non-metal.**

3 A) Complete the following sentences:

1 **Root nodule bacteria** and **lactic acid bacteria** are considered a prokaryotic beneficial microbe.

2 The symbol for the element carbon is **C**, and the symbol for sodium is **Na**.

B) Define the following:

1 Ion:

- **An atom of an element that has lost or gained one or more electrons during a chemical reaction.**

2 Apparent motion of the Sun:

- **The apparent change in the Sun's position in the sky from east to west due to Earth's rotation on its axis.**

3 Law of attraction and repulsion:

- **Magnetic poles of the same type repel each other, while opposite poles attract each other.**

4 Valence electrons:

- **They are the electrons in the last energy level.**

4 A) State the number for each of the following:

1 The total number of elements in the modern periodic table:

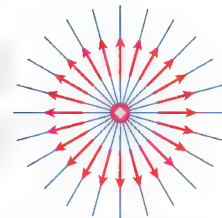
(118)

2 The number of particles in the nucleus of a hydrogen atom:

(1)

B) Answer the following questions:

1 Draw the electric field lines of a positive charge.



2 How can microbes enter the human body?

- **Through breathing, eating contaminated food, or skin penetration to reach the bloodstream.**

3 What is meant by the atomic number?

- **The number of positively charged protons in the nucleus of an atom or negatively charged electrons revolving around the nucleus.**

4 Calculate the weight of an object with a mass of 6 kg, given that the Earth's gravitational field strength is 10 N/kg.

- **Weight = mass $\times$ 10 = 6 $\times$ 10 = 60 N.**

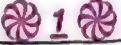
حمل الآن

مجانا وحضريا

امتحانات رقم (3)

الترم الاول



Model Exam 	Dakahlia Governorate	Science Prep. One	Time : 2 Hours
	Educational Directorate	1st Term January 2026	توجيه عام العلوم لغات
	نموذج امتحان الفصل الدراسي الأول / يناير ٢٠٢٦ / الصف الأول الاعدادي ((الاجابة في نفس الورقة / صفحة واحدة))		

First question :- (A) choose the correct answer

- 1- The bond in the sodium chloride molecule is
 A - mono-covalent B - di-covalent C - tri-covalent D - ionic
- 1- A positive electric is gained when a rod of which is rubbed with a piece of silk
 A - Glass B - ebonite C - copper D - wood

(B) :- First:- give reasons for the following

- 1- The atom is electrically neutral in its normal state.

- 2- Party balloons and blimps are filled with helium gas.

(B) :- Second :- What is the function of

- 1-nitrogen gas

- 2-Penicillium notatum fungus: -

Second question :- (A)- Complete the following statements:

- 1-..... is called the blue planet while mars is called the planet
- 2- The chemical symbol for element is Ag , while S is The chemical symbol for

(B) :- Compare between

P.O.C.	Dysentery disease	Typhoid disease
Causes microbe		
Where the microbe is located		

Third Question :- (A) Choose the odd word and write what relation between the rest of the words:

1- Elastic forces - Collision forces - Gravitational forces - Frictional forces.

2- Iron - Copper - Nickel - Cobalt.

(B) :- First What happen If ...?

1- Transferring an object from the moon's surface to the Earth's surface relative to its mass.

2- Electrolysis of acidified water

(B) :- Second:-what is meant by.....?

1- Atomic number

2- Cellular respiration

Forth Question :- (A)- Correct the underlined items:

1- Element (X) has a nucleus containing 39 nucleons and the number of neutral particles is (20), so it has an atomic number of 20. (.....)

2-Electroscope is a device that measured the weak electric charge. (.....)

(B) :- first Mention the importance of each of:

1-nitrogen gas:

2-Stainless steel alloy:

(B):-second :The following figure shows some living organisms

a) What is the type of this living organism?

b) What is the name of this living organism?

c) How does this organism move?



Model Exam  2 	Dakahlia Governorate	Science Prep. One	Time : 2 Hours
	Educational Directorate	1st Term January 2026	ترجيح عام العلوم لغات
	نموذج امتحان الفصل الدراسي الأول / يناير ٢٠٢٦ / الصف الأول الإعدادي ((الاجابة في نفس الورقة / صفحة واحدة))		

First question :- (A)- choose the correct answer

- The Atomic number of an alkali metal in the third period is
a. 3 b. 9 c. 11 d. 19
- An object of mass 500 gm, so its weight on Earth's surface equals newton
a) 5 N b) 50 N c) 40 N d) 50 Kg

(B) :- First:- give reasons for the following

- Bacteria are different from Euglena even though they are unicellular organisms.

- Occurrence of total lunar eclipse.

(B) : Second :- The opposite figure represents the electrons of the outer shell for an atom that lies in period 3 in the modern periodic table according to Lewis's rule. Find!

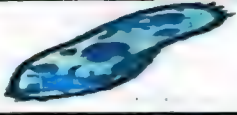
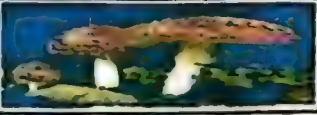


- atomic number =
- atomic number for the element preceding it directly in the same group =

Second question :- (A)- Complete the following statements:

- The number of planets that have a crust
While the number of planets that do not have active volcanoes
- The period starts with elements of group
and is end by the elements of group

(B) :- Compare between

		
Organism name		
Classification		

=====

Thrd Question : - (A)- Choose the odd word and write what relation between the rest of the words:

1- Mercury - Mars - Earth - Saturn.

2- White blood cells - Red blood cells - Stem cells - Nerve cells.

(B) : -First What happen if ...?

1- 1- Rubbing two ebonite rods with a piece of silk and bringing them close together.

2- Eating food and water contaminated with Salmonella typhi

(B) : -Second:-what is meant by.....?

1- Mass number

2- Magnetic field

=====

Forth Question : - (A)- Write the scientific term:

1-Different forms from elements having the same atomic number and different atomic masses (.....)

2-Arranging some substances according to how easily they lose electrons. (.....)

(B) : -First Mention one example of each Of the following:

1-The simplest molecule of an organic compound. (.....)

2-Unicellular organism eukaryotes (.....)

(B) : -second : Arrange the phases of the moon in ascending order according to the area of the dark part of the moon's face:

(first crescent - the full moon - waxing gibbous - waning gibbous - new moon)

Model Exam  3 	Dakahlia Governorate	Science Prep. One	Time : 2 Hours
	Educational Directorate	1 st Term January 2026	توجيه عام العلوم لغات
	نموذج امتحان الفصل الدراسي الأول / يناير ٢٠٢٦ / الصف الأول الإعدادي ((الاجابة في نفس الورقة / صفحة واحدة))		

First question : - (A) choose the correct answer

- 1- The ratio between the mass of an object at the base of a mountain to its mass at its top is one
 a) more than b) Less than c) Equal to d) Double
- 2- The number of electrons in outermost energy level of the oxygen ion (O^{2-}) is electron
 a. 8 b. 7 c. 9 d. 10

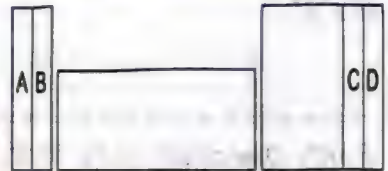
(B) : -First:- give reasons for the following

- 1- Compass box is made of copper or plastic and not of iron.

- 2- - In plants, the role of phloem tissue is the opposite of the role of Xylem tissue.

(B) : -Second :- The following figure illustrates some groups of the periodic table:

- 1- the elements of group (C)
 called
- 2- the valance of elements of group (B) is and group (D) is

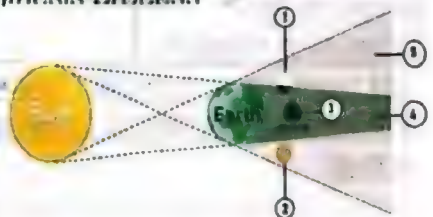


Second question : -(A)- Complete the following statements:

- 1- Water can be separated into its components using a device called
- 2- Light energy is converted into energy stored in material in the photosynthesis process

(B) : -From the following figure:

- 1- What is the name of area 4 and 5?



2- What is the name of the phenomenon that occurs to the moon in position 1 and 3?

Third Question : -(A) Choose the odd word and write what relation between the rests of the words:

1- Cell membrane - Chloroplast - Centrosome - Golgi apparatus

(.....)

2- Fe - Na - C - K

(.....)

(B) : -First What happen ...?

1- When a magnet is suspended freely from its center

2- to the atomic size or radius increases for alkali metals according to melting and boiling point

(B) : -Second:- An object that's mass on earth is equal to 6 kg. Calculate its weight on the earth's surface and on the moon if the gravitational field strength on the Earth's surface is (10 N/Kg)

Forth Question : -(A)- Write the scientific term:

1- A semi-metal used in the manufacture of electronic chips. (.....)

2- The phase of the moon following the crescent. (.....)

(B) : -Compare between:

P.O.C.	fish	Insects	amphibian
Respiratory organ			
medium for obtaining oxygen			

(B) : -second : If the periodic number of element (X) is 5 find the atomic number of the element that follows in period and group

Third Question : -(A)- Choose the odd word and write what relation between the rests of the words:

1- $_{11}\text{Na}$ - $_{17}\text{Cl}$ - $_{10}\text{Ne}$ - $_{18}\text{Ar}$ (.....)

2- Bacteria - Euglena - Paramecium - Amoeba (.....)

(B) : -First What happen when ...?

1- The Moon is in the new moon or full moon phase

2- A magnet is divided into several pieces.

(B) : -Second:- A patient is suffering from high fever accompanied by flatulence and stomach pain with a headache:-

(1) What disease is this patient suffering from?

(2) what is the name and classification of the microbe causing this disease?

Forth Question : -(A)- Write the scientific term:

1- Substances whose components cannot be separated by the physical methods. (.....)

2- Like (similar) magnetic poles repel each other and Unlike (different) magnetic poles attract each other. (.....)

B – first Look at the opposite figure, then answer:

1-The device is

2-This device is used to

second : The following figure shows the electronic configuration of element (X).

Determine:

a-The atomic number

b-Place of element in the periodic table

c-the atomic number of element that proceeds in same group



=====

Third Question: -(A)- Choose the odd word and write what relation between the rests of the words:

1- Saturn / Venus / Jupiter / Neptune. (.....)

2- Protons / ions / Electrons / Neutrons. (.....)

(B) : -First What happen ...?

1- If you heat red mercury oxide compound?

2- If we dip a sunflower leaf in lemon juice?

(B) : -Second:- A body weighs 600 N at the base of Mount

Everest. Calculate its mass at its top. [Note: Earth's gravitational field intensity = 10 N/kg]

=====

Forth Question : -(A)- Write the scientific term:

(1) A table in which elements are arranged ascending according to their atomic masses. (.....)

(2) The rotation of any object in space around another central object in a curved path due to the gravitational force between them. (.....)

(B) : -first :- Correct the underlined words:

(1) The number of elements in period 2 is greater than the number of elements in period 3 in the periodic table. (.....)

(2) Plant cells and bacterial cells both contain chloroplasts. (.....)

(B) : -second : State one result for each of the following:

(1) Touching a neutral electroscope with a charged rod.

(2) Adding a spoonful of sugar to a salt solution used for pickling olives.

(3) The Earth aligning in a straight line with the moon and the sun.

Model Exam  6 	Dakahlia Governorate	Science Prep. One	Time : 2 Hours
	Educational Directorate	1 st Term January 2026	توجيه عام العلوم لغات
	نموذج امتحان الفصل الدراسي الأول / يناير ٢٠٢٦ / الصف الأول الإعدادي ((الاجابة في نفس الورقة / صفحة واحدة))		

First question : -(A)- Choose the correct answer

1- An element's outermost energy level (L) contains a number of electrons equal to the number of electrons in the level (K), so its Atomic number is

- a.4 b.6 c.8 d.12

2- All the following are field forces, except

- (a) electrostatic forces. (b) magnetic forces.
(c) gravitational forces. (d) collision forces.

(B) : -First:- from the opposite figure ...?

1- What is the atomic Number of this ion?

2- What is the atomic number of the element that precedes it in the same group?



(B) : -Second :- Give reasons:

1-The atomic number equals the mass number for hydrogen.

2-Leaving bean plant roots in the soil after harvesting the crop.

Second question : -(A)- Complete the following statements:

- (1) The element $_{19}K$ is located in period and group
 (2) The only liquid nonmetal is while the only liquid metal is
 (3) The atmosphere of the planet contains methane, while the atmosphere of the planet contains oxygen.

(B) : -first :in the opposite figure:

1- What is the name of the bacteria?.....

2- What is the name of the disease caused by the bacteria shown in the figure?



(B) : -Second:- Compare between : - photosynthesis process and cellular respiration (in two points only).

Third Question : -(A)- put (√) or (×)

1- A repulsive force arises between a magnet and some materials. ()

2-The modern periodic table contains 11 gaseous elements. ()

3-The apparent height of the Sun is the lowest in winter. ()

(B) : -first:-State the name of each of the following:

(1) The molecule formed by the combination of three oxygen atoms.

(2) Device used in determining the type of electric charge of a charged object.

(3) Particles whose mass can be neglected while their charge can't.

(B) : -Second:- What is the scientific basis for classifying elements in the Modern periodic table?

Forth Question : -(A)- Write the scientific term:

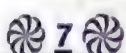
(1) Living organisms whose genetic material is surrounding with nuclear membrane. ()

(2) The organ that gets rid of excess water, mineral salts and urea in the form of urine. ()

(3) Living organisms whose genetic material is surrounding with nuclear membrane. ()

(B) : -first :- If an object weighs 50 newton , its mass on the moon's surface equals(Knowing that the gravitational field strength on the Earth's surface is 10 N/kg.)

(B) : -second : Mention the properties of ionic compounds.

Model Exam 	Dakahla Governorate	Science Prep. One	Time : 2 Hours
	Educational Directorate	1 st Term January 2026	توجيه عام العلوم لغات
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First question : -(A)- Choose the correct answer

- 1- Leaves of plant are drooping and dangling when you touch them.
 a. gazania b. mimosa c. sunflower d. cotton
- 2- Black holes are formed when a collapses at the end of its life.
 a. moon b. plants c. stars d. galaxies
- 3-number of groups which characterized by symbol (A) in the modern periodic table is
 a. 2 b. 6 c. 7 d. 8

(B) : -First:- Mention one use for each of the following:

(1) lightening rod .

(2) lactic acid bacteria .

(B) : -Second :- Give reasons:

1-Energy level (L) is saturated with 8 electrons.

2-Leaving bean plant roots in the soil after harvesting the crop.

Second question : -(A)- Complete the following statements:

- (1) cells differentiate into cells found in the brain.
 (2) Examples of protozoa include and

(B) : -first : The opposite figure shows a section of the modern periodic table:

1-What is the atomic number of elements

(A) and (Y)?

2-What is the valance of (X)?

	A	
X	₁₂ B	Y
	C	

(B) : -Second:- Illustrate with drawing:

- (1) Magnetic field lines between two similar poles of different magnets.

(2) Covalent bonding in a water molecule using Lewis structure.

Third Question : -(A)- Choose the odd word and write what relation between the rests of the words

1- Yeast fungus - Mushroom fungus - Bread mold fungus - Penicillium fungus.

2- Group 2A - Group 3A- Group 4A - Group 5A

3- Fluorine - Chlorine - Copper - Bromine

(B) : -first:-What physical quantities are measured by the following units:

(1) N/kg (.....)

(2) Coulomb (.....)

(B) : -Second: What happen

1- A charged object touches the disk of a electroscope.

2- Absence of stomata in plant leaves.

Forth Question : -(A)- Write the scientific term:

(1) The physical property used to distinguish between water and honey in terms of flow resistance. (.....)

(2) The regions in which electrons orbit around the nucleus of an atom. (.....)

(B) : -first :- compare between

P.O.C.	Mars	Jupiter
Crust		
Atmosphere		

(B) : -second : Mention the properties of ionic compounds.

Model Exam  8 	Dakahila Governorate	Science Prep. One	Time : 2 Hours
	Educational Directorate	1 st Term January 2026	توجيه عام العلوم لغات
	نموذج امتحان الفصل الدراسي الأول / يناير ٢٠٢٦ / الصف الأول الإعدادي ((الاجابة في نفس الورقة / صفحة واحدة))		

First question : -(A)- Choose the correct answer

- 1- Elements of block (d) are known as..... elements
 a. inert b. transition c. lanthanides d. actinides
- 2-is considered the closest celestial body to the Earth
 A-Venus B-Mars C-Moon D-Sun
- 3- Element has the atomic number (15) is similar in the chemical properties of the element has the atomic number
 a. 5 b. 7 c. 17 d. 19

(B) : -First:- Mention one use for each of the following:

(1) Aerogel.

(2) Stainless steel alloy.

(B) : -Second :- Give reasons:

1-Adding a small amount of pro-prepared yogurt to milk when making yogurt.

2-When the metallic ion loses an electron, it turns into a positive ion.

Second question : -(A)- Complete the following statements:

- (1) Living Organisms are classified into and.....
 depend on their nucleus.
- (2) The atomic radius of lithium (${}_3\text{Li}$) atom is than that of sodium (${}_{11}\text{Na}$).

(B) : -first : The following figure represents a section in the modern periodic table. Select the letter which indicates

- (1) An element of alkali metals
- (2) Halogen
- (3) transition element
- (4) element of atomic number 14 is



B				X	V
C			Q	G	
	R	E		M	L

(B) : -Second:- what is meant by :

(1) orbital motion .

Third Question : -(A) Mark (✓) or (×) for each statement, with correction:

- (1) The number of protons and neutrons in an atom indicates its electrically neutral. (.....)
- (2) A total lunar eclipse occurs when the moon is in Earth's penumbra. (.....)
- (3) NPK fertilizer contains sodium, potassium and nitrogen. (.....)

(B) : -first:-Complete: The gravitational force of the Earth to the Moon is than the attraction force of the Moon to the Earth.

(Explain your answer):



(B) : -Second: What happen

1-if the box of compass is made of iron .

2- The presence of methane gas among the components of the atmosphere of the planet Uranus.

Forth Question : -(A)- Write the scientific term:

- (1) An imaginary line that passes through the earth from the north pole to the south pole passing through the center of the earth.(.....)
- (2) Cells specialized in opening and closing the stomata in plant leaves. (.....)

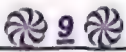
(B) : -first :- Name the device used in the following:

- (1) Electrolyzing water into its elements. (.....)
- (2) Determining the type of electric charge of a charged object. (.....)
- (3) Purifying the blood of kidney failure patients from toxins. (.....)

(B) : -second : if the weight of person on moon is 80N find (Knowing that the gravitational field strength on the Earth's surface is 10 N/kg.)

1-The weight on Earth =

2-The mass on Earth =

Model Exam 	Dakahlia Governorate	Science Prep. One	Time : 2 Hours
	Educational Directorate	1 st Term January 2026	نوبته عام العلوم لغات
	نموذج امتحان الفصل الدراسي الأول / يناير ٢٠٢٦ / الصف الأول الإعدادي ((الاجابة في نفس الورقة / صفحة واحدة))		

First question : -(A)- Choose the correct answer

- 1- Paramecium and bacteria are similar in that both are .
 a) multicellular b) unicellular C) prokaryotes d) eukaryotes
- 2- An element located in the third period and group 5A has an atomic number of .
 a)5 b)8 c)13 d)15

(B) : -First:- Write the electronic configuration for the following elements, then determine their location in the modern periodic table:

- 1- $_{10}\text{Ne}$
- 2- $_{20}\text{Ca}$

(B) : -Second :- Give reasons:

- 1- The mass number is often greater than the atomic number.

- 2- The difference in the angle at which sunlight falls on different areas of Earth's surface

- 3-Bacteria differ from amoebas although both are unicellular organisms.

Second question : -(A)- Complete the following statements:

- 1- The oxygen molecule O_2 is an example of molecule, while methane CH_4 is an example of molecule. *
- 2-Yogurt bacteria convert sugar in the milk into which gives yogurt its distinctive taste and texture.

(B) : -first : Element (X) locates in the third period and the alkali group, and the element (Y) locates in the third period and halogens group .Mention :

- 1) The atomic number for (X) and (Y)

- 2) Type of the bond produce from their combination

(B) : -Second :-Mention one use for each of the following:

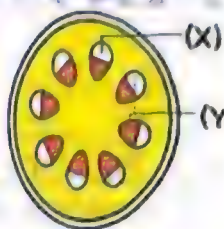
- 1- Aluminum titanium alloy:
- 2 - Electroscope:

Third Question : -(A)- Mark (✓) or (×) for each statement, with correction:

- (1) Helium is a flammable gas used to fill balloons.
.....
- (2) A person's weight on the Moon is greater than their weight on Earth.
.....

(B) : -first:- The opposite figure represents a section of a part of a plant:

- (1) Which part of the plant does the figure represent?
- (2) Replace (X) and (Y) with the appropriate data.
.....



(B) : -Second: What happen

- 1- A sodium atom (^{11}Na) loses an electron from its outermost energy level.
.....
- 2-The human body lacks vitamin D.
.....

Forth Question : -(A)- Write the scientific term:

- (1) The simplest pure form of matter that cannot be separated into components by physical or chemical methods. (.....)
- (2) They are undifferentiated cells that have the ability to transform into all differentiated cells of the body. (.....)

(B) : -first :- Write two properties of electric field lines.:

- (1)
- (2)

(B) : -second : Mention one importance for each of the following:

- 1-Tide:
- 2 -Penicillium roqueforti fungus:

Model Exam  10 	Dakahlia Governorate	Science Prep. One	Time : 2 Hours
	Educational Directorate	1 st Term January 2026	توجيه عام العلوم لغات
	نموذج امتحان الفصل الدراسي الأول / يناير ٢٠٢٦ / الصف الأول الإعدادي ((الاجابة في نفس الورقة / صفحة واحدة))		

First question : -(A)- Choose the correct answer

1- Which of the following is considered a field force?

- a) Friction b) Collision c) Magnetism d) Elasticity

2- The element is symbolized by the symbol Pb.

- a) potassium b) barium c) phosphors d) lead

(B) : -First:- The following figure is for one of the periods of the modern periodic table.

	L						
X	₁₂ Mg	Al	Si	P	Y	Z	₁₈ Ar

A- Locate the position of element (X) and (Y) in the periodic table.

B- Mention the kind of elements (X) and (Z).

C- The atomic number of elements (L). (.....)

(B) : -Second :- Give reasons:

1- Organic compounds are known as carbon compounds.

2- Paramecium is considered a eukaryote.

Second question : -(A)- Complete the following statements:

1- The valency of alkaline earth metals is while the valency of halogens is

2- The mathematical relation determines the number of electrons in the main energy levels.

(B) : -first : Classfy the following living organisms according to what you have studied, then mention the similarities between them: 1- Bacteria 2-Euglena

(B) : -Second: A body has a mass of 100kg on Earth .Calculate:

- (1) Its mass on the Moon:
- (2) Its weight on Earth, given that the gravitational field strength is 10 N/kg.

Third Question : -(A)- cross out the odd word:

- (1) Cell wall - Chloroplast - Centrosome - Golgi apparatus.
- (2) White blood cells - Red blood cells - Stem cells - Nerve cells

(B) : -first:-The opposite figure represents an living organism :

1- What is the name of this living organism?

2- What is the classification of this living organism?



(B) : -Second: What happen

1- A part of the moon enters Earth's shadow.

2- The atomic number increases within the same group (regarding atomic radius).

Forth Question : -(A)- Write the scientific term:

- (1) Homogeneous mixtures. (.....)
- (2) Living organisms whose genetic material is surrounding with nuclear membrane. (.....)

(B) : -first :- Correct the underlined words:

- (1) Amoeba moves using a flagellum. (.....)
- (2) Magnetic forces are contact forces. (.....)
- (3) Plant cells and bacterial cells both contain chloroplasts. (.....)

(B) : -second : An element with a mass number of 40 and 20 neutrons in its nucleus. Determine:

- 1- The number of occupied energy levels in the atom. (.....)
- 2- The number of electrons in the outermost energy level. (.....)

Model Exam  11 	Dakahlia Governorate	Science Prep. One	Time : 2 Hours
	Educational Directorate	1 st Term January 2026	توجيه عام العلوم لغات
	نموذج امتحان الفصل الدراسي الأول / يناير ٢٠٢٦ / الصف الأول الإعدادي		
	((الاجابة في نفس الورقة / صفحة واحدة))		

First question : -(A)- Choose the correct answer:

- 1- Element ${}_{11}\text{Na}$ is located in of the periodic table
 A- first period and third group B- third period and first group
 C- second period and third group D- second period and fourth group
- 2- is considered a pure substance that cannot be analyzed into simpler substances.
 A- element B- mixture C- solution D- compound

(B)- Give reasons for the following:

- 1- The bond in the oxygen molecule is double covalent.

- 2- The nucleus of the atom is positively charged.

- 3- Body weight changes from one planet to another.

- 4- Ricfort cheese is characterized by its green color and distinctive taste.

Second question : -(A)- Complete the following statements:

- 1- Magnetic poles repel each other, while different magnetic poles each other.
- 2- Night and day alternate due to the Earth's rotation around while the seasons alternate due to the Earth's rotation around

(B)- Mention the importance of each:

- 1- Helium gas. * *

- 2- Vitamin D.

- 3- Tides.

4- Gills.

Third Question : -(A)- Correct the underlined words:

1- Element (X) has a nucleus containing 39 nucleons and the number of neutral particles is (20), so it has an atomic number of 20. (.....)

2- The melting point of ionic compounds is low. (.....)

(B)- What happens if:

1- A charged object touches the disk of an electroscope.

2- Adding a spoonful of sugar to the brine used to make pickles

3- Absence of stomata in plant leaves.

4- The moon is completely in the Earth's penumbra.

Forth Question : -(A)- Choose the odd word, then write the relationship between the rest of the words:

1- Magnetic needle - horseshoe magnet - magnetic stone - magnetic bar.

2- Fluorine - Chlorine - Copper - Bromine .

(B)- Compare between : -

P.O.C.	Paramecium	Bacteria
Similarity		
Difference		

P.O.C.	Earth planet	Neptune planet
Crust		
Volcanic activity		

Model Exam  12 	Dakahlia Governorate	Science Prep. One	Time : 2 Hours
	Educational Directorate	1 st Term January 2026	توجيه عام العلوم لغات
	نموذج امتحان الفصل الدراسي الأول / يناير ٢٠٢٦ / الصف الأول الإعدادي ((الاجابة في نفس الورقة / صفحة واحدة))		

First question : -(A)- Choose the correct answer:-

1-Which two elements have the same chemical properties

- a) $^{39}_{19}\text{K}$ and $^{12}_6\text{C}$ b) $^{31}_{15}\text{P}$ and $^{23}_{11}\text{Na}$ c) $^{14}_7\text{N}$ and $^{51}_{23}\text{V}$ d) $^{39}_{19}\text{K}$ and $^{71}_{31}\text{Ga}$

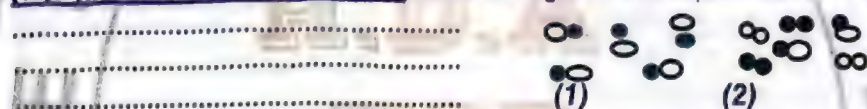
2- Element (X) has a nucleus that contains 21 neutral particles and 41 nucleons so its symbol is

- a) $^{41}_{21}\text{X}$ b) $^{14}_7\text{X}$ c) $^{21}_{41}\text{X}$ d) $^{21}_{21}\text{X}$

(B):- (1) What is the period number in which the d - block starts? what name is given to most of its elements?

Period number name

(B):- (2) State with explanation, What the figures 1 , 2 represent :



(B):- (3) What is the type of charge formed on each of a piece of synthetic leather and a wooden rod when rubbed together? Explain.

(B):- (4) What is the scientist Alexander Fleming discovered and what is used.

Second question:-Write the scientific term of the following:-

1- The force that causes a ball to fall from a high position to Earth's surface. (.....)

2-Month in which the day length can reach 13 hours and 40 minutes. (.....)

(B):- (1) Give on function of:

1- Stainless steel alloy. (.....)

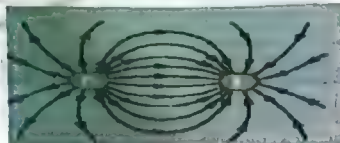
2- Aluminum - titanium alloy. (.....)

(B):- (2) In the opposite shape:

What is the type of charges X and Y

(X) is

(Y) is



(B):- (3) Write the equation that represents the cellular respiration process in eukaryotic cells.

Third question:- (A)- Four elements A is alkali metal , B is from 6A group and D is halogen. - Complete:

- 1- molecular formula A with B the type of bond is
- 2- molecular formula B with D the type of bond is

(B):- (1) What is meant by the magnetic field.

(B):- (2) Compare between Xylem and phloem tissue according to their function

a) Xylem

b) phloem tissue

(B):- (2) in the following figure:

- 1- What is the name of the region where the moon is located
- 2- What is the phenomenon is represented by the figure



Fourth question : - (A)- Cross odd word and write the scientific term of the other:

- 1- nickel / iron / cobalt / aluminum. (.....)
- 2- Gravitational force / frictional force / magnetic force / electrostatic force. (.....)

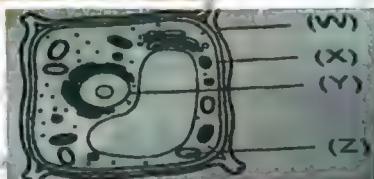
(B):- (1) From the following shape Label:

W:

X:

Y:

Z:

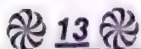


2) Compare between Mercury and Earth in terms of:-

- a) Atmospheric composition b) Volcanic activity

P.O.C	Venus	Earth
Atmospheric composition		
Volcanic activity		

Model Exam	Dakahlia Governorate	Science Prep. One	Time : 2 Hours
	Educational Directorate	1 st Term January 2026	توجيه عام العلوم لغات
	نموذج امتحان الفصل الدراسي الأول / يناير ٢٠٢٦ / الصف الأول الإعدادي ((الاجلية في نفس الورقة / صفحة واحدة))		



First question : -(A)- Choose the correct answer:

- 1- Elements of alkali metal are
 A- monovalent B- divalent C- trivalent D- quaternary
- 2- The bond in the sodium chloride molecule is
 A- mono-covalent B- di-covalent C- tri-covalent D- ionic

(B)- Give reasons for the following:

- 1- The atom is electrically neutral in its normal state.

- 2- Party balloons and blimps are filled with helium gas.

- 3- The mass of a body does not change from place to another.

- 4- Bean plants are autotrophs.

Second question : -(A)- Complete the following statements:

- 1- Magnetic field lines start from the pole of the magnet and end at the pole.
- 2- The nearest inner planets to the sun are and

(B)- Mention the importance of each:

- 1- Nitrogen gas.

- 2- Hoffman Voltmeter.

- 3- Coulomb Meter.

- 4- Penicillium notatum fungus:

Third Question : -(A)- Correct the underlined words:

- 1- The element potassium is symbolized by the symbol P. (.....)
- 2- The valence of an element can be known from the number of protons in the outer energy level. (.....)

(B)- What is the result of:

- 1- There are gravitational forces between the Earth and the Moon.

.....

- 2- A positively charged rod of glass is brought close to a freely suspended rod of ebonite with a negatively charged.

.....

- 3- The genetic material in the paramecium is surrounded by a nuclear membrane that separates it from the cytoplasm.

.....

- 4- Part of the Moon is located in the penumbra of the Earth.

=====

Forth Question : -(A)- Choose the odd word, then write the relationship between the rest of the words:

1- Elastic forces - Collision forces - Gravitational forces - Frictional forces.

.....

2- Iron - Copper - Nickel - Cobalt.

.....

(B)- Compare between : -

P.O.C.	Human	Fish
Respiratory organ		
Medium of oxygen-getting from		

P.O.C.	Venus planet	Uranus planet
Atmosphere		
Volcanic activity		

Model Exam  14 	Dakahlia Governorate	Science Prep. One	Time : 2 Hours
	Educational Directorate	1 st Term January 2026	توجيه عام العلوم لغات
	نموذج امتحان الفصل الدراسي الأول / يناير ٢٠٢٦ / الصف الأول الإعدادي ((الاجابة في نفس الورقة / صفحة واحدة))		

First question : -(A)- Choose the correct answer:

- 1- Which two elements locate in the same period in modern periodic table
 a)- ^{39}K and ^{12}C b)- ^{31}P and ^{23}Na c)- ^{12}C and ^{28}Si d)- ^{39}K and ^{7}Li
- 2- All the following are physical properties of a piece of calcium bicarbonate except it
 a)- is solid b) does dissolve in water
 c) is white substance d) produces a gas bubbles with vinegar

(B)- Compare between each of the following:

P.O.C.	1)	S - block	p - block
Number of groups			
	2)	Mercury	Earth
Volcanic activity			
	3)	Water molecule	Nitrogen molecule
Type of bond			
	4)	Adult frogs	insects
Respiratory organs			

Second question:- (A) Write the scientific term:

- 1- Seasons in which the northern end of Earth's axis neither leans close to nor away from the sun. (.....)
- 2- Disease causes increasing temperature of human body to reach 40°C , headache, flatulence, stomach and muscle pain. (.....)

(B)- Give reason for each of the following:

- 1- Sodium element $^{23}_{11}\text{Na}$ forms cation, but chlorine atom $^{35}_{17}\text{Cl}$ forms anion during chemical reaction

- 2- Mass of the atom concentrated in the nucleus

- 3- The weight of an object become zero in outer space

- 4- Green algae and plants are called producers

Third question : - (A)- Complete:

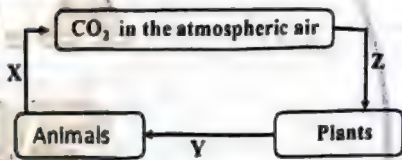
- 1- An element (X) has a nucleus contains 20 neutral particles and 39 nucleons so number of negative charges and its symbol by Z and A is
- 2- An element locates in period two and number of electrons in the outer level double the electrons in the first level so its atomic number and its type

(B)- Answer the following:

- 1- gold / cobalt / copper / silver / steel [classify according to types of magnetic materials]
- 2- beans / mushroom / amoeba / euglena / yeast [classify according to type of their cells]

3- In the following diagram
Which of the Biological process:

X
Y
Z



4- Why does not an eclipse occur every month during the full Moon phases?

Fourth question : - (A)- Put (√) or (X):

- 1- An object weight is 600 N at the base of a high mountain so its mass and weigh at the top of this mountain equal 60 Kg and 598 N. ()
- 2- Electroscope is used to identifying the type of charge on the charged object. ()

(B)- Mention one function (or important) for each:

- 1) Xylem tissue.
- 2) Penicillin. * *
- 3) A sundial.
- 4) Rotation of the Earth around its axis in front of the Sun.

Model Exam 15	Dakahila Governorate	Science Prep. One	Time : 2 Hours
	Educational Directorate	1 st Term January 2026	توجيه عام العلوم لفئات
	نموذج امتحان الفصل الدراسي الأول / يناير ٢٠٢٦ / الصف الأول الإعدادي (الإجابة في نفس الورقة / صالحة واحدة)		

First question : -(A)- Choose the correct answer:

1 - An atom in which the number of protons is half the number of neutrons.

a - $^1\text{H}_1$ b - $^1\text{H}_2$ c - $^3\text{H}_1$ d - $^{16}\text{O}_8$

2 - The two groups (1A and 2A) are from the elements found in block.

A-s B-p C-d D-f

(B)- Give reason for the following:

1- Organic compounds are known as carbon compounds.

2- The bond in the hydrogen molecule is single covalent.

3- The weight of an object on the surface of the moon is less than its weight on the surface of the earth.

4- Paramecium is considered an eukaryote.

Second question : -(A)- Complete the following statements:

1- Iron is a magnetic material while and are non-magnetic materials.

2- is called the blue planet while Mars is called the planet.

(B)- Mention the importance of each of:

1- Egyptian blue dye.

2- Stainless steel alloy.

3- Lightning rod.

4- Bronchioles.

=====

Third Question : -(A)- Correct the underlined words:

1. In Moseley's periodic table, elements are arranged in descending order according to their atomic numbers. (.....)
2. A positive ion is an atom of an element that has gained one or more electrons. (.....)

(B)- What are the results of:

1. Bringing scraps of paper closer to a glass stem that has been rubbed with silk.
.....
2. Plant leaves do not contain chloroplasts.
.....
3. Not keeping yogurt in the refrigerator.
.....
- 4- The moon falls completely into the Earth's penumbra.
.....

=====

Forth Question : -(A)- Choose the odd word, then write the relationship between the rest of the words:

- 1- Lines starting from the North Pole - imaginary lines that do not intersect - has more density at the two poles - lines starting from the South Pole.
.....
- 2- Mass - volume - weight - gravitational field.
.....

(B)- Compare between:

P.O.C.	Dysentery disease	Typhoid disease
Causes microbe		
Where the microbe is located	* *	

P.O.C.	Mars planet	Jupiter planet
Crust		
Atmosphere		

(Y) is

(B):- (3) Write the equation that represents the cellular respiration process in eukaryotic cells.

Third question:- (A)- Four elements A is alkali metal , B is from 6A group and D is halogen. - Complete:

1- molecular formula A with B the type of bond is

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(B):- (1) What is meant by the electric field.

(B):- (2) Compare between Xylem and phloem tissue according to their function

a) Xylem

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(B):- (2) In the following figure:

1- What is the name of the region where the moon is located

2- What is the phenomenon is represented by the figure



Fourth question : - (A)- Cross odd word and write the scientific term of the other:

1- Copper / silver / cobalt / aluminum. (.....)

2- Gravitational force / collision force / magnetic force / electrostatic force. (.....)

(B):- (1) From the following shape Label:

W:

X:

Y:

Z:



(B):- (2) Compare between Mercury and Earth in terms of:-

a) Atmospheric composition b) Volcanic activity

P.O.C	Mercury	Earth
Atmospheric composition		
Volcanic activity		

كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9

